

Fourteenth Biennial Report
of the
Department of Agriculture
of the
State of Florida

STATEMENT OF EXPENDITURES

FOR THE YEARS
1915 and 1916

W. A. McRAE

Commissioner

Tallahassee, Florida

T. J. APPELYARD, STATE PRINTER
TALLAHASSEE, FLORIDA.



STATEMENT OF EXPENDITURES OF APPROPRIATIONS.

In accordance with the provisions of Chapter 5870, Laws of Florida, Acts of the Legislature, 1909, I herewith submit the following detailed report of the expenditures of funds appropriated for the different divisions of the Department of Agriculture for 1915 and 1916. . .

POSTAGE.

1915.

Jan. 1—By appropriation for first six months months, 1915..	\$ 500.00
Jan. 1—To balance brought forward	5.02
Jan.. 1—To total of appropriation and amount brought forward	505.02
Jan. 1—To postal bill for December, 1914	\$ 138.13
Jan. 29—To postal bill for January, 1915	65.10
Feb. 27—To postal bill	75.37
Apr. 3—To postal bill	157.91
May 1—To postal bill for April...	67.44
Total	\$ 503.95
Balance carried forward..	1.07

EXPRESS AND TELEGRAMS.

Jan. 1—By appropriation for first six months	\$ 350.00
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2—Ag.

Jan. 1—To balance brought forward		\$ 386.46
Jan. 4—To So. Express Co.,.....	30.51	
Jan. 4—To W. U. Tel. Co.,.....	9.19	
Jan. 12—To freight and drayage....	6.31	
Jan. 22—To freight and drayage....	4.23	
Feb. 2—To W. U. Tel. Co.,.....	11.23	
Feb. 2—To So. Express Co.,.....	35.90	
Feb. 22—Freight and drayage.....	1.39	
Mar. 1—To So. Express Co.,.....	30.93	
Mar. 2—To W. U. Tel. Co.,.....	10.05	
Apr. 2—So. Express Co.,.....	28.11	
Apr. 2—To W. U. Tel. Co.,.....	17.23	
Apr. 5—To freight and drayage...	3.11	
May 4—To W. U. Tel. Co.,.....	5.44	
May 4—So. Express Co.,.....	18.83	
May 4—Freight and drayage.....	1.52	
May 14—Freight and drayage.....	1.13	
June 2—To So. Express Co.,.....	15.21	
June 3—To W. U. Tel. Co.,.....	8.31	
June 16—To freight and drayage...	1.38	
June 17—To freight and drayage...	1.84	
Total	\$ 242.10	\$ 736.46
Balance carried forward.		\$ 494.36

PRINTING STAMPS FOR FERTILIZER AND STOCK FEED.

1915.		
Jan. 1—By appropriation for first months, 1915		\$1,000.00
Jan. 1—To amount brought forward		259.91
Jan. 1—To Falconer Co.,.....	\$ 300.00	
Mar. 1—To Falconer Co.,.....	120.00	
Mar. 6—To Falconer Co.,.....	65.00	
Apr. 5—To Falconer Co.,.....	210.00	

Apr. 5—To Falconer Co.....	48.75	
May 4—To 300,000 pink stamps...	90.00	
May 4—To 350,000 green stamps...	105.00	
June 29—To 500,000 pink stamps, feed	150.00	
Total	\$1,088.75	\$1,259.51
Balance carried forward.		\$ 170.76

TRAVELING AND OTHER CONTINGENT EX-
PENSES, COMMISSIONER OF
AGRICULTURE.

1915.

Jan. 1—By appropriation for first six months, 1915		\$ 200.00
Jan. 1—To balance brought for ward		422.49
Feb. 2—To trip on official business to Jax. and return	\$ 10.40	
Feb. 12—Trip to Moultrie, Ga., and return	6.72	
Feb. 18—Trip to Pensacola and re- turn	17.65	
Mar. 8—Trip to Jacksonville and re- turn	16.60	
Mar. 27—Trip to St. Petersburg and return	20.97	
Apr. 5—Trip to Everglades and re- turn	37.90	
June 22—Trip to Havana and New Bethel and return	3.05	
June 29—Trip to Madison Co. and re- turn	4.17	
Total	\$ 117.46	\$ 622.49
Balance carried forward..		505.03

PRINTING, QUARTERLY BULLETINS.

1915.

Jan. 1—By appropriation for first six months, 1915	\$1,500.00
Jan. 1—To balance brought forward	405.99
Mar. 15—To T. J. Appleyard	\$ 19.50
Mar. 15—To T. J. Appleyard	36.00
Apr. 2—To T. J. Appleyard	42.00
May 4—To T. J. Appleyard	10.15
May 4—To T. J. Appleyard	31.50
May 4—To T. J. Appleyard	16.50
May 25—To T. J. Appleyard	1,072.20
Total	\$1,227.85
Balance carried forward..	\$1,905.99 678.14

STATIONERY AND OTHER CONTINGENT
EXPENSES.

1915.

Jan. 1—By appropriation for first six months, 1915	\$ 450.00
Jan. 1—To balance brought forward	36.45
Jan. 4—To L. C. Smith Bro., Type- writer co.	\$ 93.15
Jan. 4—To Geo. D. Barnard & Co...	11.00
Jan. 4—To H. R. Kaufman	1.25
Jan. 4—To Board of Public Works, Tallahassee	1.40
Jan. 4—To Remington Typewriter Co.	3.50
Jan. 16—To expense of transcript in case of E. E. Freeman, Sal- vador Ybor, S. F. Good- rich	3.00
Jan. 29—To Walker Evans & Cog- swell	103.74

Jan. 29—To Columbia Office Supply Co.	25.70	
Jan. 29—To J. F. Hill	2.15	
Jan. 30—To Postage	194.86	
Feb. 3—To Sub. to American Food Journal	1.00	
Feb. 4—To Sub to Country Gentlemen	1.50	
Mar. 26—To Bert Bassage, 2 Yale keys	1.00	
Mar. 26—To Columbia Office Supply Co.	5.08	
Mar. 26—To Remington Typewriter Co.	1.70	
Mar. 26—To D. R. Cox Furniture Co.	1.65	
Mar. 26—To Frederick Disinfectant Co.	10.10	
Apr. 2—To J. F. Hill	2.25	
Apr. 2—To T. J. Appleyard	2.75	
May 5—To T. J. Appleyard	2.00	
May 5—To J. F. Hill	2.65	
Total	\$ 471.43	\$ 486.45
Balance carried forward		15.02

POSTAGE.

July 1—By appropriation for last six months, 1915	\$ 900.00
July 1—To balance brought forward	1.07
July 7—To postage	\$ 37.07
Aug. 2—To postage	266.34
Sept. 2—To postage	101.73
Sept. 30—To postage	43.05

Nov. 3—To postage	3.83	
Dec. 1—To postage	112.94	
		<hr/>
Total	\$ 564.96	\$ 901.07
Balance carried forward..		336.11

EXPRESS AND TELEGRAMS.

1915.

July 1—By appropriation for last six months, 1915.....		\$ 350.00
July 1—To balance brought for- ward	494.36	
July 7—To W. U. Tel. Co.....	\$ 13.43	
July 7—To So. Express Co.....	12.87	
Aug. 2—To So. Express Co.....	15.18	
Aug. 6—To W. U. Tel. Co.....	14.05	
Sept. 2—To So. Express Co.....	10.44	
Sept. 2—To W. U. Tel. Co.....	3.35	
Oct. 2—To So. Express Co.	18.50	
Oct. 5—To W. U. Tel. Co.....	9.01	
Nov. 2—To So. Express Co.....	22.53	
Nov. 3—To W. U. Tel. Co.....	2.96	
Dec. 1—To So. Express Co.....	26.13	
Dec. 2—To W. U. Tel Co.....	4.04	
Dec. 15—To under charge .....	.42	
		<hr/>
Total	\$ 152.91	\$ 844.36
Balance carried forward.		\$ 691.46

PRINTING STAMPS FOR FERTILIZER AND STOCK
FEED.

1915.

July 1—By appropriation for last six months, 1915	\$1,000.00
July 1—To balance brought forward	170.76

Aug. 12—To the Falconer Co	\$	150.00	
Nov. 24—To the Falconer Co.		303.94	
Dec. 15—To the Falconer Co.		152.61	
Total	\$	606.55	\$1,170.76
Balance			564.21

TRAVELING AND OTHER CONTINGENT EXPENSES,
COMMISSIONER OF
AGRICULTURE.

1915.			
July 1—By appropriation for last months, 1915			\$ 200.00
July 1—To balance brought forward			505.03
July 16—Trip to Liberty, Franklin & Calhoun Co. and return	\$	14.78	
July 30—Trip to Chipley & Marianna and return.....		8.03	
July 30—Trip to Live Oak and return		4.58	
Aug. 6—Trip to Jacksonville and return		23.65	
Aug. 19—Trip to Marianna and return		9.45	
Sept. 4—Trip to Marianna and return		7.30	
Sept. 18—Trip to State Prison Farm and Jacksonville and return		19.10	
Oct. 18—Trip to Palatka and return		29.10	
Oct. 22—Trip to Holmes Co., and return		12.92	

Oct. 28—Trip to Bonifay and return	9.90	
Nov. 13—Trip to Pensacola and return	28.99	
Nov. 13—Trip to Jacksonville and return	6.51	
Nov. 30—Trip to Ocala and return..	43.32	
Dec. 7—Trip to Insane Asylum and return	2.97	
		<hr/>
Total	\$ 220.60	\$ 705.03
Balance carried forward .		\$ 484.43

PRINTING QUARTERLY BULLETINS.

1915.

July 1—By appropriation for last six months, 1915		\$1,500.00
July 1—To balance brought forward		678.14
July 7—To T. J. Appleyard	\$ 24.00	
Aug. 2—To T. J. Appleyard	45.75	
Aug. 13—To T. J. Appleyard	635.25	
		<hr/>
Total	\$ 705.00	\$2,178.14
Balance carried forward..		1,473.14

STATIONERY AND OTHER CONTINGENT EXPENSES.

1915

July 1—By appropriation for last six months, 1915		\$ 500.00
July 1—To balance brought forward		15.02
July 7—To Geo. D. Barnard	\$ 16.70	
July 7—To Walker Evans & Cogswell	12.71	

July 7—To Remington Typewriter Co.	1.70
July —To Underwood Typewriter Co.	3.50
July 7—To Columbus Office Supply Co.	25.00
July 7—To T. J. Appleyard	1.50
July 7—To J. F. Hill	5.45
July 7—To Cox Furniture Co.	4.95
July 23—To the Florida Grower ...	1.50
July 23—To Board of Public Works, Tallahassee	37.00
Aug. 2—To H. R. Kaufman .....	.50
Aug. 2—To Walker Evans & Cogswell	12.29
Aug. 2—To Underwood Typewriter Co.	4.50
Aug. 2—To Frederick Disinfectant Co.	4.00
Aug. 6—To Cox Furniture Co.	3.30
Aug. 6—To T. J. Appleyard .....	.50
Aug. 6—To J. F. Hill	5.45
Aug. 11—To Freight and Drayage ..	1.52
Aug. 30—To Freight and Drayage ..	2.82
Sept. 2—To Board of Public Works, Tallahassee .....	.50
Sept. 2—To W. L. Marshall	10.00
Sept. 2—To Columbus Office Supply Co.	2.57
Sept. 2—To Union School Furnishing Co.	30.00
Sept. 11—W. S. Cathcart	6.00
Sept. 14—To Bert Bassage	1.50
Sept. 17—To Pichard Brothers	41.30
Sept. 21—To Walker Evans and Cogswell	38.00

Sept. 21—To Board of Public Works, Tallahassee	2.60	
Sept. 27—To Freight and Drayage ..	7.22	
Oct. 2—To H. R. Kaufman	1.85	
Oct. 14—To Sub. 1 year Journal Ass. Q. A. Chemists	4.00	
Oct. 23—To Freight and Drayage ..	1.00	
Oct. 23—To 2 electric light brackets	12.00	
Nov. 2—To Board of Public Works, Tallahassee	2.15	
Nov. 3—To H. N. Sweeting	5.00	
Nov. 3—To T. J. Appleyard	1.45	
Nov. 3—To Walker Evans and Cogs- well	13.25	
Nov. 11—To Dan Allen, freight and drayage	1.00	
Nov. 11—To Mrs. Consonier	1.00	
Nov. 16—To 2 years Sub., Manufac- turers Record	6.00	
Nov. 24—To Geo. Barnard & Co....	100.00	
Dec. 2—To H. R. Kaufman	1.15	
Dec. 2—To Geo. D. Barnard & Co...	2.33	
Dec. 2—To D. R. Cox Furniture Co.	1.65	
Dec. 7—To Dan Allen, Drayage ...	75	
Dec. 8—To Remington Typewriter Co.	67.20	
Total	\$ 514.91	\$ 515.02
Balance carried forward..		.21

POSTAGE.

1916.	
Jan. 1—By appropriation for 1916	\$1,800.00
Jan. 1—To balance brought for- ward	336.11

Jan. 4—To postal bill	\$ 299.06	
Feb. 1—To postal bill	102.06	
Mar. 2—To postal bill	22.57	
Apr. 3—To postal bill	111.32	
May 1—To postal bill	106.25	
July 1—To postal bill	46.30	
July 28—To postal bill	257.96	
Sept. 1—To postal bill	42.83	
Sept. 2—To postal bill	24.15	
Sept. 9—To postal bill	30.52	
Sept. 25—To postal bill	90.00	
Nov. 2—To postal bill	25.50	
Nov. 22—To postal bill	91.00	
Dec. 19—To postal bill	30.50	
Dec. 21—To postal bill	16.00	
Total	\$1,296.03	\$2,136.11
Balance carried forward.		\$ 840.08

EXPRESS AND TELEGRAMS.

1916.

Jan. 1—By appropriation for the year, 1916		\$ 700.00
Jan. 1—To balance brought for- ward		691.46
Jan. 4—To W. U. Tel. Co.	\$ 11.60	
Jan. 4—To So. Express Co.	25.80	
Jan. 13—To freight and drayage....	2.39	
Feb. 1—To So. Express Co.	29.06	
Feb. 3—To W. U. Tel. Co.	10.11	
Feb. 16—To drayage	50	
Mar. 1—To So. Express Co.	27.90	
Mar. 2—To W. U. Tel. Co.	10.09	
Apr. 3—To So. Express Co.	20.72	
Apr. 3—To W. U. Tel. Co.	10.13	
May 1—To So. Express Co.	9.97	
May 2—To W. U. Tel. Co.	12.80	

May 8—To drayage	50	
June 3—To So. Express Co.	16.82	
June 3—To W. U. Tel. Co.	19.57	
June 19—To Freight and drayage ..	31.17	
June 24—To freight and drayage ...	3.63	
June 27—To freight and drayage	1.10	
July 1—To freight and drayage ...	4.21	
July 4—To So. Express Co.	16.11	
July 4—To W. U. Tel. Co.	21.90	
July 20—To drayage .....	.50	
Aug. 2—To W. U. Tel. Co.	27.69	
Aug. 2—To So. Express Co.	57.25	
Sept. 1—To So. Express Co.	18.26	
Sept. 1—To W. U. Tel. Co.	9.05	
Sept. 15—To freight and drayage ...	7.18	
Oct. 3—To So. Express Co.	23.48	
Oct. 3—To W. U. Tel. Co.	14.17	
Nov. 2—To So. Express Co.	26.57	
Nov. 8—To freight and drayage ...	8.66	
Nov. 8—To W. U. Tel. Co.	11.24	
Dec. 2—To Dan Allen	1.00	
Dec. 2—To W. U. Tel. Co.	2.21	
Dec. 2—To So. Express Co.	45.76	
Total		\$ 539.10
Balance carried forward..		\$1,391.45
		852.35

PRINTING STAMPS FOR FERTILIZER AND STOCK FEED.

1916.

Jan. 1—By appropriation for the year 1916.	\$2,000.00
Jan. 1—To balance brought for- ward	564.21
Jan. 29—To 500 M. stamps	\$ 177.80

Feb. 16—To 500 M. stamps	177.80
Mar. 28—To 500 M. stamps	152.65
May 10—To Falconer Co.	152.13
June 17—To Falconer Co.	104.33
July 24—To Falconer Co.	48.00
July 24—To Falconer Co.	32.76
July 24—To Falconer Co.	121.27
Sept. 2—To Falconer Co.	121.91
Oct. 7—To Falconer Co.	122.42
Nov. 3—To Falconer Co.	30.00
Dec. 4—To Falconer Co.	395.72

Total	\$1,636.79	\$2,564.21
To balance carried forward		\$ 927.42

TRAVELING AND OTHER CONTINGENT EXPENSES,
COMMISSIONER OF AGRICULTURE.

1916.

Jan. 1—By appropriation for the year 1916	\$ 400.00
Jan. 1—To balance brought forward	484.43
Jan. 24—Trip to Gainesville and return	\$ 14.27
Feb. 5—Trip to Baker & Okaloosa Co. and return	15.23
Feb. 11—Trip to Tampa and return	34.13
Feb. 26—Trip to Orlando, Bushnell, Webster, Bartow, Tampa, Lakeland, Mayo, and Perry and return	60.22
Mar. 9—Trip to Apalachicola and return	4.93

Mar. 9—Trip to DeFuniak Springs and return	12.62
Mar. 28—Trip to St. Augustine and return	16.40
Aug. 14—Trip to Cedar Key and re- turn	18.91.
May 26—Trip to Panama City and Chipley and return	16.90
June 10—Trips to Chattahoochee, Jackson Bluff and Chipley and return	13.53
June 22—Trip to Quincy and return.	3.00
July 8—Trip to Monticello, Ga., and return	12.70
July 24—Trip to Perry and return..	8.01
July 29—Trip to Jacksonville, Pen- sacola, Madison and re- turn	40.96
Aug. 5—Trip to Gainesville and re- turn	14.99
Aug. 8—Trip to Crawfordville and return	3.75
Aug. 15—Trip to Marianna and re- turn	5.76
Aug. 24—Trip to Thomsaville and return	5.25
Oct. 21—Trip to Manatee & Jack- sonville and return	33.13
Nov. 9—Trip to Jacksonville and return	16.10
Nov. 13—Trip to Vero and return..	31.85
Nov. 24—Trip to Jacksonville and Palatka and return	19.82
Dec. 13—Trip to Jacksonville and return	13.20
Dec 20—Trip to Jacksonville and re- turn	17.45

Dec. 20—Trip to Havana and re-		
turn	3.00	
Total	\$ 436.08	\$ 884.43
Balance carried forward.		\$ 448.35

PRINTING QUARTERLY BULLETINS.

1916.

Jan. 1—By appropriation for the		
year, 1916		\$3,000.00
Jan. 1—To balance brought for-		
ward		1,473.14
Mar. 3—To T. J. Appleyard	\$ 42.44	
June 8—To T. J. Appleyard	440.14	
June 8—To T. J. Appleyard	30.56	
Aug. 15—To T. J. Appleyard	638.07	
Sept. 1—To T. J. Appleyard	118.00	
Nov. 24—To T. J. Appleyard	407.06	
Nov. 24—To T. J. Appleyard	9.00	
Total	\$1,685.27	\$4,473.14
To balance carried forward		\$2,797.87

STATIONERY AND OTHER CONTINGENT EXPENSES.

1916.

Jan. 1—By appropriation for the		
year 1916		\$1,000.00
Jan. 1—To balance brought for-		
forward .....		.21
Jan. 4—To H. & W. B. Drew Co...\$	7.40	
Jan. 4—To Underwood Typewriter		
Co.	14.00	
Jan. 4—To Remington Typewriter		
Co.	3.50	
Jan. 4—To Walker Evans and Cogs-		
well	91	

July 1—To J. F. Hill.....	5.60
July 1—To Cox Furniture Co.	2.50
July 5—To Underwood Typewriter Co.	33.03
July 5—To Underwood Typewriter Co.	33.03
July 5—To Remington Typewriter Co.	57.34
July 10—To T. J. Appleyard	10.50
July 10—To T. J. Appleyard	20.00
July 24—To American Mills Co.	65.65
July 24—To Lucas Brothers	44.35
July 29—To J. W. Corbett	21.00
Aug. 2—To Ragsdale Electric Co...	1.00
Aug. 3—To D. R. Cox Furniture Co.	1.30
Aug. 4—To one year Sub. to Fla. Grower	1.50
Aug. 5—To W. L. Norton	3.50
Sept. 1—To Board of Public Works, Tallahassee	32.00
Sept. 1—To W. L. Marshall	3.00
Sept. 2—To Dan Allen	1.00
Sept. 2—To H. R. Kaufman	1.20
Sept. 6—To Yaeger Rhodes Hard- ware Co.	1.25
Sept. 6—To J. F. Hill	20.50
Sept. 19—To Lucas Brothers	64.04
Sept. 19—To Remington Typewriter Co.	3.00
Oct. 3—To T. J. Appleyard	1.50
Nov. 2—To H. R. Kaufman	6.25
Nov. 20—To H. & W. B. Drew Co. ..	6.10
Nov. 20—To Lucas Brothers	23.33

Nov. 20—To Lucas Brothers	114.00	
Nov. 28—To Board of Public Works, Tallahassee	1.90	
Total	\$ 777.00	\$1,000.21
Balance carried forward .		223.21

EXTRA PRINTING FOR IMMIGRATION PURPOSES

1916.		
Jan. 1—By appropriation for the year 1916.		\$1,500.00
Jan. 1—To balance brought for- ward		1,500.00
Apr. 1—To Daily True Democrat..	62.00	
May 18—To Washington Electro- type Co.	33.50	
May 18—To the Maurice Joyce En- graving Co.	24.01	
June 24—To Daily True Democrat .	15.00	
Sept. 6—To Daily True Democrat..	7.00	
Sept. 27—To Mrs. F. R. Phillips....	20.00	
Total	\$ 161.51	\$3,000.00
Balance carried forward .		\$2,838.49

VOLUME 14
1915/16



STATE CAPITOL BUILDING

Fourteenth Biennial Report
of the
Department of Agriculture
of the
State of Florida

Division of Agriculture and Immigration

PART 2

FOR THE YEARS
1915 - 1916

W. A. McRAE

Commissioner

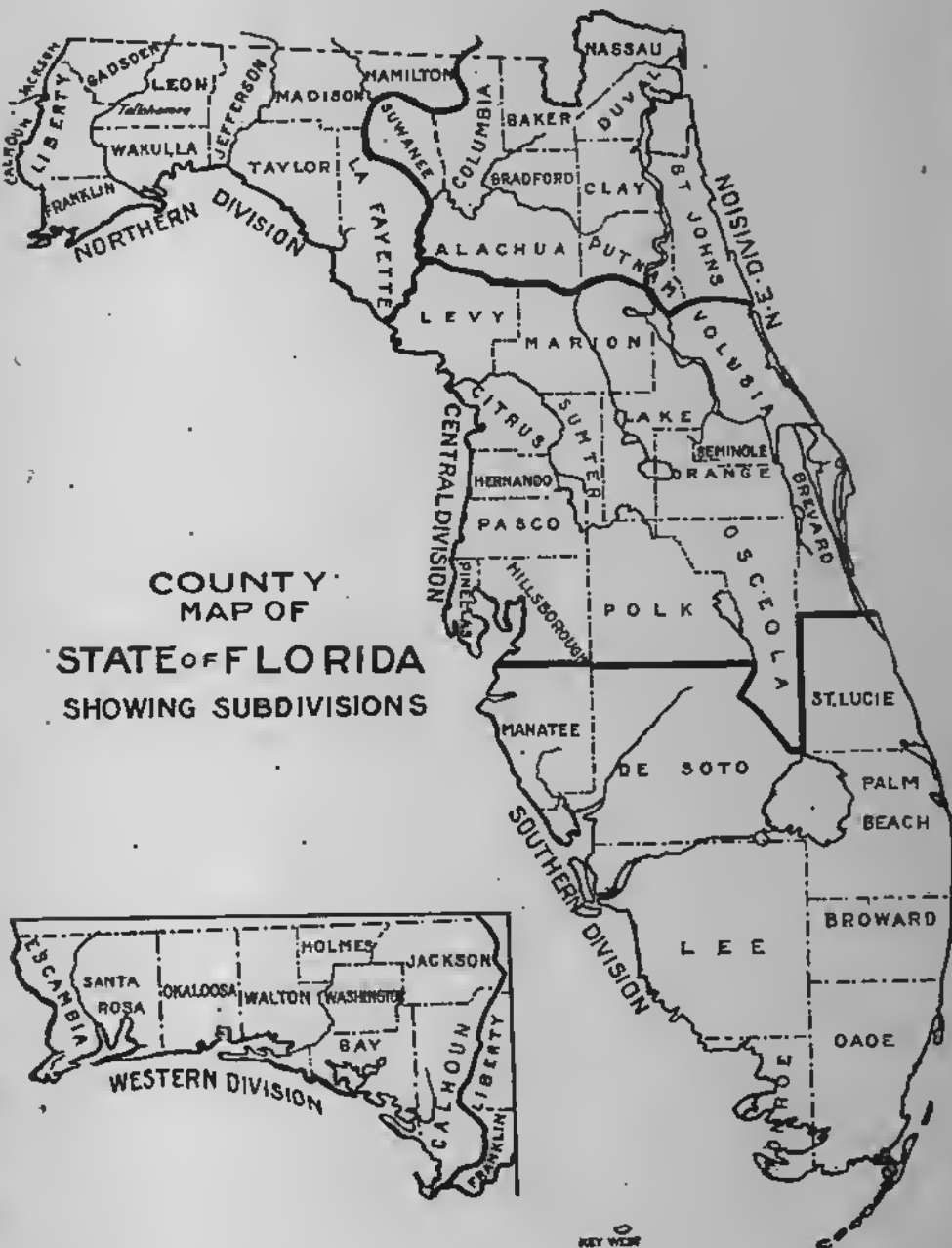
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LETTER OF TRANSMITTAL

DEPARTMENT OF AGRICULTURE, STATE OF FLORIDA,
COMMISSIONER'S OFFICE.

To His Excellency,
Sidney J. Catts,
Governor of the State of Floriad:

Sir:

As provided by law, I herewith submit the Bi-ennial Report of the Department of Agriculture for the years 1915-1916. The dates upon which the agricultural, horticultural live stock and industrial statistics are based cover the period from July 1, 1915, to June 30, 1916, inclusive. The Industrial Reports for the year 1915. All other Divisions are for the two years 1915 and 1916.

Respectfully submitted,

W. A. Mc RAE.

Commissioner of Agriculture

PREFACE

In the publication of a report that will give the best results, we find it necessary to present each branch or division of the Department separately, treating each subject or division separate and distinct from the other. We therefor publish the report of each division under separate cover.

In order that the public may realize the magnitude and importance of the work of the Department of Agriculture, we give below an outline of the duties of the Commissioner of Agriculture.

1. Division of Agriculture.
2. The Division of Immigration.
3. The Prison Division.
4. The Pure Food and Drugs, Stock Feed and Fertilizer Division.
5. The Land Division.
6. The Field Note Division.
7. Shell Fish Commission.

In addition to the above the Commissioner of Agriculture is a member of the following Boards:

1. The Board of Commissioners of State Institutions.
2. The Board of Pardons.
3. The Trustees of the Internal Improvement Fund.
4. The Board of Drainage Commissioners.

VOLUME II
DIVISION
OF
AGRICULTURE

DIVISION OF AGRICULTURE

By H. S. Elliott, Chief Clerk, Department of Agriculture.

Article 4, Section 26, of the Constitution, provides that "The Commissioner of Agriculture shall perform such duties in relation to Agriculture as may be prescribed by law, shall have supervision of all matters pertaining to the public lands under regulations prescribed by law, and shall keep the Bureau of Immigration. He shall also have supervision of the State Prison and shall perform such other duties as may be prescribed by law.

CHANGE IN FORM OF PRINTING REPORT.

Volume No. 1 contains an introductory review by the Commissioner of Agriculture. This, Volume 2, contains the report of the Divisions of Agriculture, and Immigration only. The Manufacturing Schedule also is in one Volume—No. 3, The other four divisions being also contained in separate publications. This is made necessary by the greatly increased amount of work of the Department and to facilitate handling through the mails. If the work of all divisions of the Department were published in one book, it would be so unwieldy as to make it too heavy for mailing, as well as wasteful, because necessarily a lot of matter would have to be sent to enquirers that is not requested. A considerable saving in expense is gained by publishing the report in separate form. Copies of the reports of any one of the Divisions may be had on application.

The financial statement of the Department is also published in a separate form.

The following statements will serve to convey some idea of the work performed by this Department in connection with the discussion of the subjects that follow throughout this work.

Number of letters written on Agricultural, Industrial, Immigration and numerous subjects, incidental to the work of the Department, approximately	35,000
Number of maps distributed to applicants by mail for the two years 1915 and 1916.....	20,000
Number of pieces of mail matter containing printed information sent in reply to inquiries concerning the State, over.....	250,000
Number of Quarterly Bulletins used in Immigration work and mailed to applicants on request beyond the State, over.....	33,000
Number of Quarterly Bulletins mailed to regular subscribers (no subscription fee)....	58,500
Number of express packages handled by this division	800
Number of packages by registered mail, over...	2,000
Number of telegraph messages received and answered, approximately	650

Just reading over the bare statements and figures above made, conveys no conception of the vast amount of work required to properly direct and perform the duties entailed upon the office by the varied character of the demands for information.

This does not include the work of gathering and compiling the Agricultural, Industrial and other Statistics of the State, nor the preparation of the vast quantity of matter for publication in various forms with which to meet the ever increasing demand for information in a more or less detailed form, and which will be found on the pages that follow.

AGRICULTURAL MATTERS.

Discussion of Minor Subjects.

The progress and advancement made by our State in the lines of agricultural and industrial development during the two years just passed has far surpassed the two



previous years. Considering the rapidity of the change in what may be justly termed an era of transformation, the events of the recent past appear as ancient history. When we reflect upon the remarkable success attained by those engaged in the various branches of agricultural pursuits, we perforce realize that there is practically no limit to the capacity of our soils or our resources and possibilities of industrial accomplishment.

Agriculture is the oldest industry and farming the greatest science in the world. Yet too often have the tillers of the soil lost sight of the scientific feature of farming, thereby depleting their lands through continued practice of worn-out methods that should have been long since eliminated from consideration.

A diversity of soil crops and an increase in the livestock industry, to the extent that the farms are made self-sustaining, will work wonders in the restoration of depleted soil conditions. It will do more—it will demonstrate beyond doubt that the only road to profitable farming lies in the diversification of crop production and the raising of livestock, and it is morally certain to create a more modern system of farm management along the lines suggested.

ILLUSTRATIONS.

It will be observed that this volume contains a number of illustrations relating to Agricultural, Horticultural, livestock and other allied industries.

Every picture in this book is an illustration of Florida products, nothing is illustrated that is not entirely a product of the State.

SOIL EROSION.

In this connection we wish to bring to the farmer's attention a condition that is growing serious in the more rolling lands of the State, and is wasting at a high rate the fertility of these lands. We mean soil erosion.



Soil washing by heavy rains is a cause of the loss of soil fertility on rolling upland farms. The amount of this loss is difficult to determine accurately. But it is reasonably certain that as much as four to five per cent, of the real fertile soil may be lost during one year on even a gently sloping field if the surface is left bare of vegetation. This means that the continuous cultivation for a long period of time may result in the loss of practically all the fertile soil on even gently rolling land, unless some methods are adopted to prevent it. On hill lands the loss is necessarily much more rapid.

The element lost in this way is one of the most valuable that exists—nitrogen. This element in the soil is contained in the organic or vegetable matter. Nitrogen is made available for the use of plants by the decay of organic matter. It is considered that about two per cent. of the total amount present becomes available each year. It is this two per cent. which may be removed by the crops, by leaching, and in the form of gas, by evaporation. As the availability of the other elements of plant food in the soil is closely associated with the decay of organic matter, it is certain that the washing away of that part of the soil richest in organic matter results in a lack of all the really valuable plant food. In addition to the loss of plant food, the poorer physical condition of the soil resulting from the removal of organic matter and the inconvenience caused by the necessity for ditches in the fields are to be considered.

The sort of farm work that causes excessive erosion is continuous cultivation without crop rotation, shallow plowing, running furrows down the hills, leaving the land bare of vegetation in winter, neglect of control of the gullies, and the exhaustion of organic matter.

The best way to control erosion is by systematic rotation of crops, containing fewer cultivated crops and more hay and pasture crops by the gradual deepening of the soil, by occasional deep plowing, the use of barn

yard and green manures, winter cover crops such as rye, oats and wheat, and prompt control of gullies and ditches.

Cultivate the level lands and plant the hillsides to pasture grasses for permanent pastures, and thus reclaim the worn-out hill lands.

As lands increase in value, reclamation becomes profitable. Steep, badly washed hillsides may be also set to forest trees. Small ditches may be filled with litter and soil and seeded down to grass. Large ditches may be filled by obstructing with brush and coarse litter staked and weighted down, by planting willows, or placing some form of obstruction in the gullies, which will in time aid in filling them and gradually restore these soils to useful fields. Our people must realize that neglect in this matter means positive ruin to the land itself. They must also realize that the soil is the one most valuable natural resource of any country. From this source, directly or indirectly, we derive all that we have, use or subsist upon. In fact, the soil may justly be considered the bedrock of civilization itself. Thus considered it becomes as necessary to existence as the air we breathe or the water we drink. Then the case of the soil and the prevention of its destruction is one of the most important features connected with farm management. It is a vital subject to continued prosperity and the maintenance of farm land values. No owner of lands can afford to ignore its importance.

LIVE STOCK A SPECIALTY.

The greatest of all farm specialties is livestock. Whatever branch of farming is carried on, livestock should form as large a part of it as possible. It is one of the greatest aids to successful crop production, as well as one of the surest means of making money. Unfortunately, the cattle tick in our country, has been and still is, a menace to cattle growing, but with the active interest

taken by the people generally and assisted by State organization and the Federal Government, the process of tick eradication is progressing rapidly.

On other pages further on in this report will be found some interesting and convincing statements on this subject, and let us still bear in mind that practically all of the Eastern Hemisphere is in the throes of war, and is today drawing toll at a tremendous rate from this country.

In America the depletion of food supplies is becoming noticeable in the high prices of bread stuffs, especially wheat—near \$2.00 per bushel. All food animals are in greater demand than can be supplied, and it is quite certain that this demand will continue for ten years or longer, even though the war should end at once, which is very improbable. But even when it does end there will be a shortage of livestock for agricultural purposes as well as food. This need will have to be met, and the only source of supply will be of our own raising on our own farms.

They will not be obtainable in other States as formerly. They will have to be supplied by the livestock growers of our State.

It is not likely that production can or will be overdone for at least half a century.

The day is far distant when the prices of meat will cheapen, the trend is upward, and the chances are that meats of all kinds will grow dearer steadily for years to come. The day of cheap meat is passed even in this land of plenty.

IMMIGRATION.

A synopsis of the detailed work of this Department appears on previous pages, and indicates clearly the volume of work transacted through this Department in the work of Immigration, because there is no separately established Bureau of Immigration charged with the

duty of caring for the business. The Constitution requires the Commissioner of Agriculture to keep the Bureau of Immigration, but in the absence of specific clerical help, this work must be and is performed by the clerical force of the Department of Agriculture. Additional help should be provided.

A WORD OF CAUTION TO INVESTORS.

To those persons who are contemplating a removal to Florida we again offer a few words of caution, and advise them that, before they make any purchase of lands, or even enter into any contract to purchase, that they first pay a visit to Florida and make personal investigation of the lands offered them. No matter who it is that makes the tempting offer, make them wait until either you can investigate personally or through some undoubtedly reliable source. There is no scarcity of land in Florida. Millions of acres of good lands are still here to choose from. Unless this course is pursued there can be no certainty that the interested homeseeker or investor will get what he wants. But see what is offered first, is our advice, then you will know what you are getting and your choice is likely to be satisfactory. Besides, it is due to both buyer and seller that common sense methods and proper business precautions are observed.

METEOROLOGICAL REPORT.

The report is one of great value as well as interest to the people of our State, and particularly useful to the thousands of persons who are contemplating a change of residence to Florida or of making investments in the State.

The weather service is, at all seasons of the year, a great protection to the farmers, vegetable and fruit growers of the State through its system of storm and temperature warnings, as well as to those engaged in ocean commerce. It is also specially worthy of publication for

the history it makes relative to the meteorology of the State. It supplies information of a character that is in constantly increasing demand and which cannot well be obtained by or distributed to those wanting such information as when given publication in our official reports. The report for 1915 follows the Agricultural Statistical report for 1915-1916 further on in this work.

WHY FLORIDA SHOULD LEAD THE EAST-ERN UNITED STATES IN THE GROW-ING OF LIVESTOCK

*By H. S. Elliott, Chief Clerk, Department of
Agriculture.*

In the Thirteenth Bi-ennial Report of this Department the writer published a bulletin on the Growing and Feeding of Live Stock in Florida. The effect of the bulletin referred to was as hoped for and intended. It attracted country-wide attention to the possibilities of livestock production in this State in a way never before realized. It brought immediate results in the form of many hundreds of inquiries, requesting further and additional information on the subject. The transformation that has come about in the large and rapid development of the industry in the past two years is within the knowledge of all who are interested in this—the greatest of agricultural industries in America or the world.

The good accomplished by the bulletin alluded to leads the writer to publish the following bulletin embracing another and most important branch of the same subject.

This bulletin is devoted principally to a discussion of the pasture and hay grasses of the State. So little is known and so little information has been given to the public on this phase of the subject heretofore, that thousands of people have never and do not now realize the great importance and economic value of the natural and cultivable grasses of their State. It is the object of this



bulletin to bring these facts to the notice of the people, that they may take advantage of them and utilize them for their personal use and the benefit of the public.

The tables inserted in various parts of the bulletin showing the feeding values of various forage plants are incidental to the main subject, and are intended more especially to illustrate and to assist the reader in keeping up with the more important point of the subject; so also with the figures relating to construction and contents of silos, etc.

It must be realized that this bulletin covers a great range of territory—the whole State, the area of which is upwards of 37,700,000 acres.

Throughout this vast domain extending from the extreme southern end of the State to its far western boundary there are literally millions of acres of magnificent land adapted to all branches of agriculture. There are immense areas of timbered lands of the most valuable kinds, broad savannas, and meadow lands stretching miles in extent in close proximity to each other, that will support hundreds of thousands of heads of cattle or sheep in fine condition nine or ten months of the year. In fact, the grazing capacity of these lands is as unlimited as the uses they can be put to for agricultural purposes.

Not only are the soils adapted in a high degree to the production of all of the crops necessary to feed and care for livestock of every kind, but a glance at a map of the State will show that it is abundantly blessed with a never failing and well distributed water supply; a necessity that cannot be overlooked or ignored, but is one of those things absolutely essential to all branches of agriculture if it is to be successful, and especially with livestock raising, but is a vital asset which is lacking to a great degree in most, and to a considerable extent in all the livestock producing sections of the United States, especially the Southwest.

Another essential of equal importance, as we have indi-

cated, is the capacity of the soils, to produce all of the necessary grain and forage crops, as well as the pastures for grazing purposes. There is no limit to this, except the will of the grower. To give an idea of the large number of these crops that can be successfully produced on the soil above referred to, we submit the following list, which includes both forage, hay and grazing plants fully adapted to the soil and climate in this section of the country.

Name of Variety.	Yield per Acre of Green Forage. in Tons.	Yield per Acre of Grain in Head. in Pounds.
Red Kaffir Corn.....	3,968	1,187,50
Sirak... ..	10,225	1,050,00
Honey.....	6,281	562,50
Sapling.....	5,900	550,00
Brown Durra	5,350	450,00
Minnesota Amber.....	8,612	975,00
Planters Friend, No. 36	13,068	787,00
Orange	13,813	1,366,50
Gooseneck, Erect.....	16,907	793,00
Planters Friend, No. 37	16,318	887,50
Amber.....	10,461	1,033,50
Sumac.....	12,449	429,50
Shallu.....	11,556	2,112,50
White Kaffir	8,153	727,00
Gooseneck, Pendant ..	19,036	856,25
Collier	13,896	742,50
Red Amber	12,283	1,500,00
Cigne	12,450	900,00
Jerusalem Corn.....	8,204	458,00
Yellow Milo.....	9,487	900,00

CLOVERS, GRASSES AND VETCHES.

	Yield per Acre in Tons of Dry Hay per Season.
1 Hairy Vetch	2 to 3
1 Alfalfa	5 to 6 ..
Lespedeza	1 to 2

1 Burr Clover	2 to 4
Crimson Clover	2 to 4
Rhodes Grass	4 to 6
atal Grass	1 to 2
Orchard Grass	1 to 2
Bermuda Grass	1 to 2
Crab Grass	1 to 2
Tall Meadow Oat Grass	1 to 2
Para Grass	2 to 4
Herds of Red Top Grass	1 to 2
Crow-foot Grass	1 to 2
Millet	3 to 5
Johnson Grass	3 to 6
Rape (never cut)	—

1 Should be inoculated.

LEGUMINOUS CROPS OTHER THAN CLOVERS

All Cow or Field Peas.

Velvet Beans.

Soy Beans.

Beggar Weed.

Kudzu.

Peanuts.

The following table gives the average of a few of the best hays and will serve further to impress those interested with not only the capacity of the soils of this State to produce the most valuable forage and hay plants, but with their high quality and value, as feeding products.

The following table gives the average composition of some of the best hays:



Dry Hay	Water	Ash	Protein	Carbohydrates (Alcohol- Free Extract)	Crude Fiber	Val. (Ether Extract)
Cowpea	11.9	8.4	14.4	41.2	21.6	2.6
Alfalfa	8.4	7.4	14.3	42.7	25.0	2.2
Soy Bean	13.3	7.9	15.4	38.6	22.3	5.2
Clover (Red)	15.3	6.2	12.3	38.1	24.8	3.3
Peanut Vine	7.6	0.8	10.7	42.7	23.6	4.6
Lespedeza	11.5	4.1	9.6	40.1	31.4	3.3
Timothy	13.2	4.4	5.9	45.0	29.5	2.5
Johnson Grass	10.2	6.1	7.2	45.9	28.5	2.1

Per Cent of Digestible Matter.

Cowpea .....	...	...	9.3	29.1	2.1	1.9
Alfalfa .....	...	...	10.6	28.2	10.7	0.9
Soy Beans .....	...	...	10.9	26.6	13.6	1.5
Red Clover .....	...	...	7.6	26.3	12.1	2.0
Peanut Vine .....	...	...	6.7	23.9	12.3	...
Lespedeza .....	...	...	7.6	31.0	...	1.8
Timothy .....	...	...	2.8	28.3	15.1	1.4
Johnson Grass .....	...	...	3.2	24.8	16.5	0.8

FOOD ELEMENTS IN SOME HAYS.

	Protein.	Carbohydrates.
Beggarweed	16 per cent.	69 per cent.
Cowpeas	16 per cent.	67 per cent.
Velvet Bean	14 per cent.	72 per cent.
Peanut	13 per cent.	73 per cent.
Crowfoot Grass	8 per cent.	75 per cent.
Crab Grass	7 per cent.	79 per cent.
Timothy	6 per cent.	82 per cent.
Millet	6 per cent.	76 per cent.
Mexican Clover	5 per cent.	79 per cent.

Showing Feeding Value of Some of These Hays.

Timothy	\$20.00 per ton.
Velvet Bean	20.05 per ton.
Peanut	20.00 per ton.
Beggarweed	19.95 per ton.
Crab Grass	19.60 per ton.
Cowpea	19.50 per ton.
Mexican Clover	19.05 per ton.
Crowfoot Grass	10.00 per ton.
Millet	18.65 per ton.

There are many more, but these are enough, as they are also the best of the forage plants

As all of the products referred to below figure largely in the following pages, we discuss them in their relation to hog feeding, as well as in relation to pastures.

SOME GOOD RATIONS ALL GROWN IN FLORIDA.

Any one of the following rations should be found satisfactory for fattening hogs. The question of cost will, of course, enter into the selection of a ration. It will be found necessary, perhaps, to estimate the cost of the different feeds and see which will be the most economical to use.

RATION I.

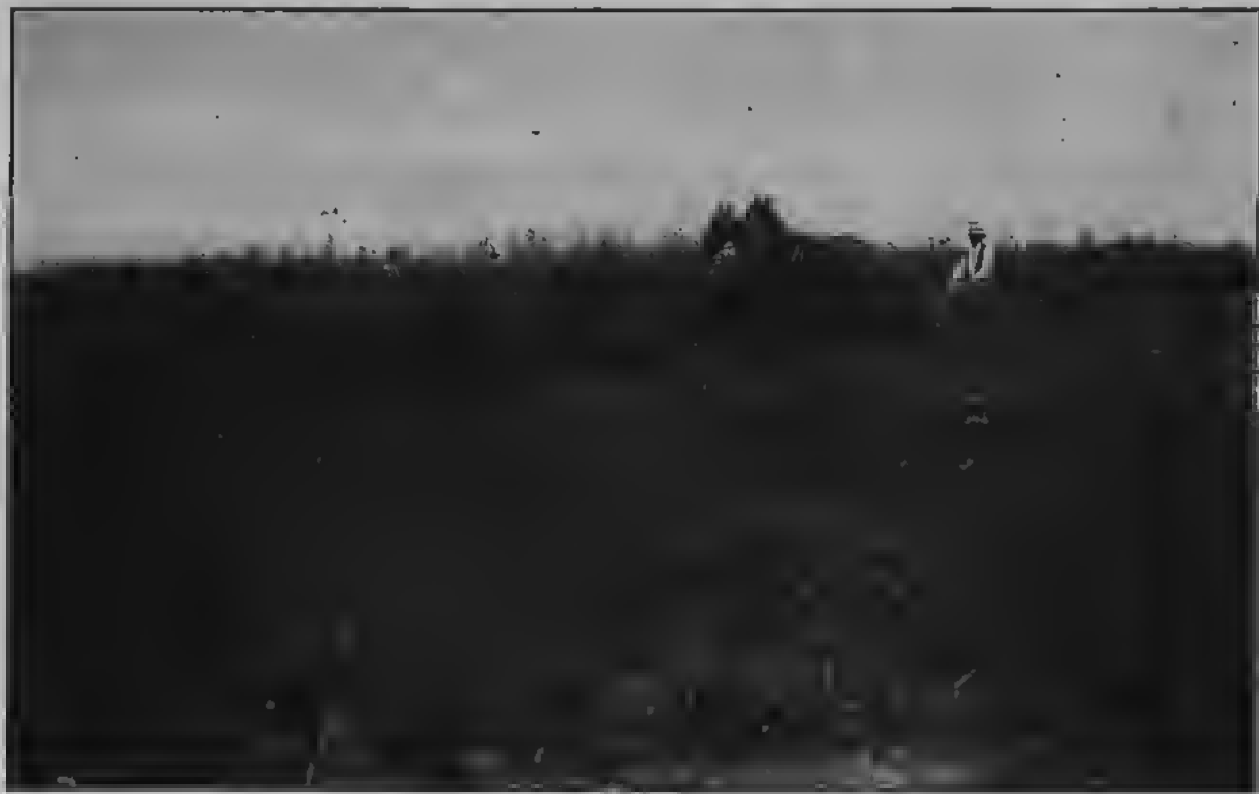
	Pounds	Protein Pounds	Carbohyd. Pounds	Fat Pounds
Corn	12	0.96	7.94	0.51
Sweet Potatoes	10	0.09	2.75	0.53
Cottonseed Meal....	1.75	0.66	0.37	0.17
Cowpeas	5	0.84	2.74	0.06
Total.....	30.75	2.55	13.80	0.77

RATION II.

	Pounds	Protein Pounds	Carbohyd. Pounds	Fat Pounds
Corn	15	1.20	9.93	0.64
Soy Beans	3	0.87	0.70	0.44
Dwarf Essex Rape..	25	0.50	2.02	0.05
Total.....	43	2.57	12.65	1.13

RATION III.

	Pounds	Protein Pounds	Carbohyd. Pounds	Fat Pounds
Sorghum Seed.....	10	0.45	6.11	0.28
Corn	10	0.80	3.31	0.43
Cowpeas	7.75	4.26	4.11	0.08
Total.....	27.5	2.51	13.53	0.79



SOME PRINCIPAL FEEDS,

The Component-Parts of Which Are Grown in Florida.

Average Percentage Composition and Digestible Matter.

Feeding Stuffs.	Percentage Composition.					Percentage Digestible.		
	Water.	Protein.	Carbohydrates.		Fats.	Protein.	Carbohydrates.	Fats.
			Fiber.	Nitrogen—Free Extract.				
Flint Corn	11.3	10.5	1.7	70.1	5.0	8.00	66.2	4.3
Corn Meal	15.0	9.2	1.9	68.7	3.8	6.70	64.3	3.5
Corn and Coh Meal	15.1	8.5	6.6	64.8	3.5	4.40	60.0	2.9
Wheat Bran	11.9	15.4	9.0	53.9	4.0	11.9	42.0	2.5
Shorts	11.2	16.9	6.2	56.2	5.1	13.0	45.7	4.5
Cowpea	14.6	26.5	3.9	56.3	1.5	16.8	54.3	1.1
Soy Bean	11.7	33.5	4.5	28.3	17.2	29.1	23.3	14.6
Kaffir Corn	9.9	11.2	2.7	71.5	3.1	5.2	44.3	1.4
Sorghum Seed ...	12.8	9.1	2.6	69.3	3.6	4.5	61.1	2.8
Milo Maize Seed..	9.0	10.7	3.0	72.2	2.8	4.9	44.8	1.3
Cottonseed	10.3	18.4	23.2	24.7	19.9	12.5	30.0	17.3
Cottonseed Meal..	7.0	45.3	6.3	24.6	10.2	37.6	21.4	9.6
Sunflower Seed ..	8.6	16.3	29.9	21.4	21.2	14.8	29.7	18.2
Chufa	79.5	0.7	2.2	10.5	6.6	0.6	9.1	5.6
Sorghum, green ..	.....	.....	.....	.....	.....	0.6	11.6	0.3
Cowpeas, green ..	.....	.....	.....	.....	.....	1.8	8.7	0.2
Skim Milk	90.4	3.3	.....	4.7	0.9	2.9	5.3	0.3
Buttermilk	90.1	4.0	.....	4.0	1.1	3.8	3.9	1.0
Dwarf Essex Rape ..	.....	.....	.....	.....	.....	2.0	8.1	0.2
Sweet Potatoes ..	.....	.....	.....	.....	.....	0.8	22.9	0.3
Bermuda Grass,...	.....	.....	.....	.....	.....	1.3	13.4	0.4

PORK PRODUCTION.

Pork production in Florida is not receiving the attention it deserves. At the present time there are perhaps near a million head of hogs in the State. This number, however, does not supply the demand for pork. Florida farmers can certainly produce pork more cheaply than the cost of production elsewhere plus the freight.



To make the largest profit from hogs they should be put on the market at the youngest possible age. Many of the Florida hogs are from one year to a year and a half old before they are ready for market. The Florida market demands a hog that will weigh 125 to 160 pounds. Animals of such weight can be produced in five to seven months. When they have to be kept and fed for a year to a year and a half, the risk of loss and the cost of feed become too great to yield any assured profit. Farmers in the corn belt, where the demand is for hogs weighing from 200 to 250 pounds, have their hogs ready for market at nine months to one year of age.

There is a too common impression among many farmers that the hog is a sort of scavenger, that any refuse will do for it to eat, and any filthy pen will do for it to live in. It is true that hogs do often act as scavengers, and also that they can live in filthy places, but these conditions are generally brought about when the animals have no choice in the matter. Hogs are not naturally a filthy animals, but they are capable of existing under unsanitary conditions.

PEN-FEEDING UNPROFITABLE.

If we are to get the largest possible returns from raising hogs it will be found necessary to make the hogs pay for their keep. One of the best ways to do this will be to make them harvest the crops grown for feed. The cost of harvesting the various crops adds considerably to the cost of production. This, in a measure, explains the high cost of production when we try to raise hogs by keeping them in small pens. When they are kept in small pens we do not only have to harvest and carry the feed to them, but in many cases we are obliged to carry all the water which they drink. Therefore, we should make the hogs harvest as many of the crops as practicable.

In the small pen it is impossible to keep the animals under sanitary conditions. If they are not kept under



healthy conditions, we are inviting disease to visit the herd, which means a big loss instead of a profit. It will also be found that hogs will not make as rapid growth while kept shut up in small pens as when given the run of a small field.

CHOOSING A BREED.

There are many breeds of hogs. Some breeds are better adapted to certain climatic conditions than others. For Florida there are several breeds that will be found well adapted to our needs.

Farmers wishing to produce pork should raise Berkshires, Poland Chinas, Duroc Jerseys, and Essex. Those wishing to produce bacon should raise Hampshires and Tamworths. A hog that is raised for pork alone or for bacon alone is more profitable to us than one that is raised for both pork and bacon. In general, Florida conditions are more favorable for pork production than for bacon.

In selecting a breed for Florida conditions it will be found advisable not to select a white one, as these do not do as well in our climate as the black or red breeds. White hogs sun-scald easily, and become scurfy and mangy. When in such a condition they cannot be expected to grow and develop as they would if healthy. If given an abundance of shade and water at all times there is less trouble from this source.

However, the selection of the breed is a personal matter. A person should choose the one he fancies most and which will produce the results he desires. It may be that the Duroc Jersey will meet with your approval, while your neighbor across the road will say that the Berkshire is the only breed for him. This is because he has had better success with the Berkshire, and is probably better temperamentally adapted to that breed. Therefore select the breed you like best, barring the white ones.

GRADING UP.

The disappearance of unimproved blood by the continuous use of pure-bred sires is shown in the customary way in the following table:

Generations.	Sires. Pct. of Pure Breed.	Dams. Pct. of Pure Breed.	Offspring. Pct. of Pure Breed.
1	100	0	50
2	100	50	75
3	100	75	87.5
4	100	87.5	93.75
5	100	93.75	96.87
6	100	96.87	98.44

Hypothetically, the offspring from the sixth generation will have retained on the average 1.55 per cent. of the unimproved blood from the original dam or the dam of no breeding. (This applies only to the average of large numbers and does not apply to individuals.)

The breeder must be reminded that to produce the high grade, no other sire than a pure-bred one of the breed selected can be used. No progress will be accomplished by using a grade, scrub, or crossbred sire. Nor can progress toward eventual purity of blood be made by using pure-bred sires of different breeds for each cross or occasional cross. Grading up means using a pure-bred sire for the first cross and continually crossing the female offspring with pure-bred sires of the breed first selected, until all impure blood has been practically bred out.

It is not necessary for the farmer who is producing pork for the market to keep a breeding herd of registered sows. A herd of high grades will answer the purpose nearly as well and they can be purchased at a much cheaper rate. The one important thing is that the breeder use a pure-bred sire. If he must start with a herd of inferior sows, by using a pure-bred sire it will only be a question of two or three years until he will have a herd of good grades.



LOCATION AND GREEN CROPS.

The ideal farm for raising hogs is one that will afford an abundance of shade, with enough fresh running water and in addition a liberal amount of grazing. It may not be possible to find all of these conditions naturally in one field, but they can be supplied at a comparatively small outlay. Shade can be furnished in a short time by planting some quickly-growing trees or shrubbery. If necessary, some annuals may be grown for the first year until the permanent plantings become large enough to supply the shade. If there is not already a sufficient amount of water at hand, it can be supplied by putting down a well and erecting a windmill or installing a gasoline engine. The supply of fresh water is as important to the welfare of the hog as is the grain given. It is well known that if pigs are not given an abundance of water, they will not fatten as rapidly as they should.

Some kind of green feed for the hogs to graze on, or as soiling, will go a long way toward reducing the cost of production. The green feed supplied will not entirely replace the grain; but it will replace a part of it, and at the same time increase the gain that it is possible to get from a given amount of grain. For instance, if one hundred pounds of corn fed, alone will produce eight or ten pounds of pork, this same amount of corn, when fed with some green feed will produce from 12 to 15 pounds of pork. This is not entirely due to the food value of the green feed, but partly to the fact that the green feed regulates and tones up the digestive and circulatory system and keeps the animals in healthy condition.

There is hardly any grass or grain that hogs will not eat when green, and there are many weeds on which they will feed. The following is a list of useful forage crops for hogs in Florida. The crops in this list will give pasture throughout the entire year.

	Can be pastured from
Dwarf Essex Rape.....	December to March.
Japanese Cane.....	November to March.
Rye, Oats, Barley.....	November to April.
Sorghum.....	May to November.
Cnufaa.....	August to December.
Sweet Potatoes.....	October to December.
Cowpeas and Soy Beans.....	July to November.
Peanuts.....	September to December.

For a permanent pasture it is doubtful if we can get anything better than Bermuda and crab grass. These do not furnish pasturage for the entire year, but can be depended upon from early spring until late fall.



CARE OF THE HERD.

The brood sow and boar are the foundation of the hog industry. It is important, therefore, that the most careful attention be given to these. They must receive such food and care as will insure good, healthy brood sows and strong, healthy litters of pigs. Each represents one-half of the herd.

Prolificacy, though more or less an inherited characteristic, is, to a large extent, controlled by the feed and

care of the sow. Good breeding sows are often reduced in value as breeders by improper feeding. If the sows are fed largely on carbonaceous ration, they are likely to become too fat. When the sows are kept too fat, they are not regular breeders. When they do farrow, the result is a small litter of weak pigs.

The sows should not be starved at any time. They should be fed on a well-balanced ration with plenty of protein to produce an abundant flow of milk. After the pigs are weaned the sow requires nearly the same ration. It is a common practice with many farmers to put the brood sow on a starvation ration as soon as the pigs are weaned. It is as bad to feed them on corn only. Corn alone may do for fattening an animal, but when fed alone to pregnant sows it does not supply enough protein to properly develop the growing foetus. The result is the sows will farrow small litters of weak pigs. If we wish to maintain a prolific strain of brood sows, we must give attention to how they are fed.

As To Silos.

This subject is so necessary to successful livestock feeding and is also referred to so often in the following pages that it is inserted here:



Table No. 1.

Relation of Size of Silo to Length of Feeding Period and Size of Herd.

No. Cows in Herd.	Feed for 180 Days.			Feed for 240 Days.		
	Estimated tonnage of silage consumed, tons.	Size of Silo.		Estimated tonnage of silage consumed, tons.	Size of Silo.	
		Diam. feet.	Height feet.		Diam. feet.	Height feet.
10	36	10	25	48	10	31
12	43	10	28	57	10	35
15	54	11	29	72	11	36
20	72	12	32	96	12	39
25	90	13	33	120	13	40
30	108	14	34	144	15	37
35	126	15	34	168	16	38
40	144	16	35	192	17	39
45	162	16	37	216	18	39
50	180	17	37	240	19	39

The following table gives further figures regarding the capacity of silos of different sizes.

Table No. 2.

Capacity of Silos of Different Sizes.

Depth of silage, ft.	Inside diameter of silo in feet.				
	10	12	14	16	18
	Tons.	Tons.	Tons.	Tons.	Tons.
25	36	52	68	96	122
28	40	61	81	108	137
30	44	68	90	115	150
32	50	72	95	126	162
34	53	77	108	142	171
36	57	82	114	153	194



After ascertaining the capacity of silos of various sizes and learning the length of time the silage in each will last with a given number of animals to feed, our next question will probably be, "How many acres of corn are required to fill a silo of given dimensions?" The answer to this question can be found in the data given below.

Average Yield of Silage Per Acre.

Yield of corn, bushels.	Yield of silage, tons.
30	6
40	8
50	10
60	12
80	16
100	20

It will be seen from the figures just given that corn yielding 50 bushels to the acre will make ten tons of silage to the acre. Quoting Professor C. H. Eckles, in the bulletin just mentioned, he states:



"Upon the basis of total food value, $2\frac{1}{2}$ tons of silage are equal to one ton of timothy hay. This means that a yield of ten tons of silage per acre is equivalent in feeding value to 4 tons of timothy hay per acre. On the same basis, when corn is worth 50 cents per bushel, a ton of silage is worth \$3.35. Calculated in this way, an acre of corn yielding 50 bushels per acre when put into the silo is worth \$33.50, while at 50 cents per bushel, the grain is worth \$25.00."

HOW TO DETERMINE THE WEIGHT OF SILAGE IN THE SILO.

Sometimes we would like to know just how many pounds or tons of silage remain in a silo after we have begun feeding. Feeders have been heard to say: "If I had known that my silage would run out before grass was good enough for pasture, I should have fed a little lighter." If the silage is partly used out of a silo and we wish to sell the remainder, we would like some method of computing the number of tons that we may have for sale.

The table given below shows the computed weight of well-matured corn silage at different distances below the surface, and the total weight to those distances two days after filling.

Depth of silage, feet.	Weight per cubic foot of silage at different depths, lbs.	Total weight one square foot area to depth given, lbs.
1	18.7	18.7
2	20.4	39.1
3	22.1	61.2
4	23.7	84.9
5	25.4	110.3
6	27.0	137.3
7	28.5	165.8
8	30.1	195.9
9	31.5	227.5
10	33.1	260.6
11	34.5	295.1
12	35.9	331.0
13	37.3	368.3
14	38.7	407.0
15	40.0	447.0
16	41.3	488.3
17	42.6	530.9
18	43.8	574.3
19	45.0	619.7
20	46.2	665.9
21	47.4	713.3
22	48.5	761.8
23	49.6	811.4
24	50.6	862.0
25	51.7	913.7
26	52.7	966.4
27	53.6	1020.0
28	54.6	1074.6
29	55.5	1130.1
30	56.4	1186.5
31	57.2	1243.7
32	58.0	1301.7
33	58.8	1260.5
34	59.6	1420.1
35	60.3	1480.4
36	61.0	1541.4

ADDITIONAL INFORMATION ON THE METHODS
OF CALCULATING SIZE AND COST OF SOME
HOME MADE SILOS, AND OTHER VALUABLE
AND NECESSARY DATA ON SILOS, FEEDS, ETC.

The concrete silo has the advantage over all others in

permanency and stability. A well constructed concrete silo will last indefinitely; there is no danger of its blowing or burning down, rotting out, or being attacked by vermin. Little attention is required to keep it in good condition. The chief objection to it is, its cost. In the end it is cheapest.

COST OF SILOS.

Recent data on the cost of home-made silos collected from all parts of the country show the following relative cost of the three types:

Type of silo.	Number of silos.	Average capacity, tons.	Average cost.	Average cost per ton capacity.
Concrete:				
100 tons or less.....	71	71	\$220.47	\$3.10
101 tons or less.....	50	135	343.68	2.59
More than 200 tons...	23	219	446.42	2.04
Total concrete.....	144	117	301.08	2.58
Modified Wisconsin.....	8	116	185.52	1.61
Stave:				
100 tons or less.....	25	63	118.40	1.87
Over 100 tons.....	16	129	187.46	1.45
Total stave.....	41	89	145.35	1.63

The following table will show the proper diameter of the silo for herds of different sizes to be fed different amounts for winter feeding, when two inches of silage are removed daily:

Relation of size of herd to diameter of silo for winter feeding on basis of 40 pounds of Silage per cubic foot.

Inside Diam- eter of silo.	Quantity of silage in depth of 2 inches.	Number of animals that may be fed, allowing			
		40 pounds per head.	30 pounds per head.	20 pounds per head.	15. pounds per head.
<i>Feet.</i>	<i>Pounds.</i>				
19	524	13	17	26	35
11	634	16	21	31	42
12	754	19	25	37	50
13	885	22	29	44	59
14	1,026	25	34	51	68
15	1,178	29	39	59	78
16	1,340	33	44	67	89
17	1,513	38	50	75	101
18	1,696	42	56	85	113
20	2,094	52	70	104	139

A 900-pound cow will ordinarily consume 30 pounds of silage a day; a 1,200-pound cow about 40 pounds. Yearlings will eat about one-half as much as mature animals; fattening cattle, 25 to 35 pounds for each 1,000 pounds live weight. A sheep will take about one-eighth as much as a cow. Horses should be limited to 15 to 20 pounds daily.

In general, the depth of the silo should not be less than twice nor more than three times the diameter. The greater the depth the better the silage, on account of the pressure from above. If less than 24 feet in height the quality of silage will not be the best. A very great height, however, is to be avoided on account of the excessive amount of power required to elevate the cut corn into the silo.



CAPACITY OF ROUND SILOS

*Approximate Capacity of Cylindrical Silos, for Well-Matured
Corn Silage, in Tons.*

Height of Silo Inside, Feet.	Inside Diameter of Silo, Feet.											
	8	10	11	12	13	14	15	15	17	18	19	20
20	18	30	36	45	51	60	66	.....	.....	.....	.....	.....
21	19	31	39	48	54	53	71	.....	.....	.....	.....	.....
22	20	33	41	50	57	66	76	87	.....	.....	.....	.....
23	22	34	43	52	60	70	80	91	.....	.....	.....	.....
24	23	35	45	55	64	73	85	95	104	120	122	.....
25	24	38	48	57	68	77	90	99	110	125	129	145
26	25	40	50	60	71	80	94	103	116	130	137	155
27	27	42	52	63	75	85	98	107	121	136	145	161
28	28	44	54	66	79	90	102	111	126	140	152	170
29	30	46	56	70	83	95	106	116	132	145	160	177
30	31	48	58	75	86	100	110	120	136	150	163	185
31	33	50	62	79	90	105	114	125	141	156	176	193
32	35	53	66	84	94	110	118	131	148	162	184	200
33	36	55	69	89	98	115	123	137	155	169	192	208
34	37	58	73	94	102	120	131	143	162	175	200	217
35	39	61	77	100	106	125	136	149	169	183	209	226
36	40	64	82	105	110	130	139	155	176	190	218	235
37	41	67	86	109	115	135	144	161	183	200	227	245
38	43	70	89	114	119	140	151	167	190	212	235	256
39	45	73	95	118	124	145	157	173	197	220	245	267
40	47	75	98	121	129	150	165	180	204	228	255	279
41	.....	77	101	125	134	155	170	187	211	236	262	290
42	.....	80	104	128	139	160	176	193	218	244	270	300
43	.....	.....	.....	132	144	166	181	201	225	252	280	310
44	.....	.....	.....	135	150	171	188	207	233	261	289	320
45	.....	.....	.....	.....	.....	176	195	215	240	269	298	330
46	.....	.....	.....	.....	.....	182	200	222	247	277	307	340
47	.....	.....	.....	.....	.....	.....	.....	229	254	285	316	350
48	.....	.....	.....	.....	.....	.....	.....	236	251	293	326	361
49	.....	.....	.....	.....	.....	.....	.....	.....	.....	301	334	371
50	.....	.....	.....	.....	.....	.....	.....	.....	.....	310	344	382

*Table Showing Required Acreage and Stock Feeding
Capacity for Silos of Various Sizes.*

Dimensions.	Capacity in Tons.	Acres to Fill. 15 tons to Acre.	Cows it will keep 6 mos., 40 lbs. Feed per day.
10 x 20	30	3.	8
10 x 24	36	3.	10
10 x 28	44	3.	11
10 x 32	53	3.4	14
10 x 40	75	4.6	19
10 x 20	45	3.	11
12 x 24	55	3.2	13
12 x 28	66	4.1	15
12 x 32	84	5.	20
12 x 40	121	7.3	27
14 x 20	60	4.2	14
14 x 22	66	4.5	17
14 x 24	73	4.7	19
14 x 28	90	5.6	22
14 x 32	110	6.7	27
14 x 40	150	9.2	37
16 x 24	95	6.2	24
16 x 28	111	7.2	29
16 x 32	130	8.7	35
16 x 40	180	12.	49
18 x 30	150	10.2	41
18 x 36	190	13.	50
18 x 40	229	15.3	62
18 x 36	277	18.3	77
20 x 30	185	12.5	50
20 x 40	279	18.8	77
20 x 50	382	25.5	104
20 x 60	500	32.	136

APPROXIMATE COST OF DIFFERENT KINDS OF SILOS

The cost of a silo will depend on local conditions as to price of labor and materials; how much labor has to be paid for; the size of the silo, etc. The comparative data for the cost of two round silos, 13 and 25 feet in diameter, and 30 feet deep, is given by Prof. King, as shown in the following table:

Kinds of Silo.	13 Feet Inside Diameter.		25 Feet Inside Diameter.	
	Without Roof.	With Roof.	Without Roof.	With Roof.
Stone Silo	\$151	\$175	\$264	\$328
Brick Silo	243	273	437	494
Brick-lined Silo, 4 ins. thick	142	230	310	442
Brick-lined, 2 ins. thick. Lathed and plastered Silo	131	190	239	369
Wood Silo with Galvanized Iron	133	185	344	363
Wood Silo with Paper..	168	185	308	432
Stave Silo	128	222	235	358
Cheapest Wood Silo....	127	183	136	289
	101	144	195	240

The following rule for feeding good dairy cows is a safe one to be guided by: Feed as much roughage (Succulent feeds like silage or roots, and hay) as the cows will eat up clean, and in addition, 1 pound of grain feed (concentrates) a day per head for every pound of butter fat they produce in a week (or one-third to one-fourth as many pounds as they give milk daily).

The farmer should aim to grow protein foods like clover, alfalfa, peas, etc., to as large extent as practicable, and thus reduce his feed bill.

The following table gives actual chemical analysis of the products mentioned and includes the entire contents of the various feeds. The next table shows the average amount of digestible nutrients in the more common American fodders, grains and by-products, and is the table that should be used in formulating rations. The table gives the number of pounds of digestible nutrients contained in 100 pounds, of the feeds and these figures can, therefore, be used in figuring out the amount of digestible nutrients in any given amount of food material.



*Average Composition of Silage Crops of Different Kinds,
in Per Cent.*

	Water.	Ash.	Crude Protein.	Fiber.	Nitrogen Free Ext.	Ether Extract.
Corn Silage, Mature Corn.	73.7	1.6	2.2	6.5	14.1	.9
Immature Corn	79.1	1.4	1.7	6.0	11.0	.8
Ears removed	80.7	1.8	1.8	5.6	9.5	.6
Clover Silage	72.0	2.6	4.2	8.4	11.6	1.2
Soja Bea Silage	74.2	2.8	4.1	9.7	6.9	2.2
Cow-pea Vine Silage.....	79.3	2.9	2.7	6.0	7.6	1.5
Field-pea Vine Silage.....	50.0	3.6	5.9	13.0	26.0	1.6
Corn Cannery Refuse Husks	83.8	.6	1.4	5.2	7.9	1.1
Corn Cannery Refuse Cobs	74.1	.5	1.5	7.9	14.3	1.7
Pea Cannery Refuse.....	76.8	1.3	2.8	6.5	11.3	1.3
Sorghum Silage.....	76.1	1.1	.8	6.4	15.3	.3
Corn-Soja Bean Silage....	76.0	2.4	2.5	7.2	11.1	.8
Millet-Soja Bean Silage...	79.0	2.8	2.8	7.2	7.2	1.0
Rye Silage	80.8	1.6	2.4	5.8	9.2	.3
Apple Pomace Silage.....	85.0	.6	1.2	3.3	8.8	1.1
Cow-pea and Soja Bean mixed	69.8	4.5	3.8	9.5	11.1	1.3
Corn Kernels	41.3	1.0	6.0	1.5	46.6	3.6
Mixed Grasses (Rowen)...	18.4	7.1	10.1	22.8	36.0	5.7
Brewers' Grain Silage	69.8	1.2	6.6	4.7	15.6	2.1

Analysis of Feeding Stuffs, of the More Common American Fodders, Grains and By-Products.

Name of Feed.	Dry Matter in 100 Lbs	Digestible Nutrients in 100 Pounds.		
		Protein. Lbs.	Carbohy- drates. Lbs.	Ether Extract (Crude Fat) Lbs.
Green Fodders.				
Pasture Grasses, mixed...	20.0	2.5	10.2	0.5
Fodder Corn	20.7	1.0	11.6	0.4
Sorghum	20.6	0.6	12.2	0.4
Red Clover	29.2	2.9	14.8	0.7
Alfalfa	28.2	3.9	12.7	0.5
Cow Pea	16.4	1.8	8.7	0.2
Soja Bean	24.9	3.2	11.0	0.5
Oat Fodder	37.8	2.6	18.9	1.0
Rye Fodder	23.4	2.1	14.1	0.4
Rape	14.0	1.5	8.1	0.2
Peas and Oats.....	16.0	1.8	7.1	0.2
Beet Pulps	10.2	0.6	7.3	...
Silage.				
Corn	20.9	0.9	11.3	0.7
Corn, Wisconsin Analysis.	26.4	1.3	14.0	0.7
Sorghum	23.9	0.6	14.9	0.2
Red Clover	28.0	2.0	13.5	1.0
Alfalfa	27.5	3.0	8.5	1.9
Cow Pea	20.7	1.5	8.6	0.9
Soja Bean	25.8	2.7	8.7	1.3
Dry Fodder and Hay.				
Corn Fodder	57.8	2.5	34.6	1.2
Corn Fodder, Wisc. Anal..	71.0	3.7	40.4	1.2
Corn Stover	59.5	1.7	32.4	0.7
Sorghum Fodder	59.7	1.5	37.3	0.4
Red Clover	84.7	6.8	35.8	1.7
Alfalfa	91.6	11.0	39.6	1.2
Barley	85.2	6.2	46.6	1.5
Blue Grass	78.8	4.8	37.3	2.0
Cow Pea	89.3	10.8	38.6	1.1
Crab Grass	82.4	5.7	39.7	1.4
Johnson Grass	87.7	2.4	47.8	0.7
Marsh Grass	88.4	2.4	29.9	0.9
Millet	92.3	4.5	51.7	1.3
Oat Hay	91.1	4.3	46.4	1.5
Oat and Pea Hay.....	85.4	9.2	36.8	1.2
Orchard Grass	90.1	4.9	42.3	1.4
Prairie Grass	87.5	3.5	41.8	1.4
Red Top	91.1	4.8	46.9	1.0
Timothy	86.8	2.8	43.4	1.4
Timothy and Clover.....	85.3	4.8	39.6	1.6

*Average Composition of Silage Crops of Different Kinds,
in Per Cent.*

	Water.	Ash.	Crude Protein.	Fiber.	Nitrogen Free Ext.	Ether Extract.
Corn Silage, Mature Corn.	73.7	1.6	2.2	6.5	14.1	.9
Immature Corn	79.1	1.4	1.7	6.0	11.0	.8
Ears removed	80.7	1.8	1.8	5.6	9.5	.6
Clover Silage	72.0	2.6	4.2	8.4	11.6	1.2
Soja Bea Silage.....	74.2	2.8	4.1	9.7	6.9	2.2
Cow-pea Vine Silage.....	79.3	2.9	2.7	6.0	7.6	1.5
Field-pea Vine Silage.....	50.0	8.6	5.9	13.0	26.0	1.6
Corn Cannery Refuse Husks	83.8	.6	1.4	5.2	7.9	1.1
Corn Cannery Refuse Cobs	74.1	.6	1.5	7.9	14.3	1.7
Pea Cannery Refuse.....	76.8	1.3	2.8	6.5	11.3	1.3
Sorghum Silage.....	76.1	1.1	.8	6.4	15.3	.3
Corn-Soja Bean Silage....	76.0	2.4	2.5	7.2	11.1	.8
Millet-Soja Bean Silage...	79.0	2.8	2.8	7.2	7.2	1.0
Rye Silage	80.8	1.6	2.4	5.8	9.2	.3
Apple Pomace Silage.....	85.0	.6	1.2	3.3	8.8	1.1
Cow-pea and Soja Bean mixed	69.8	4.5	3.8	9.5	11.1	1.3
Corn Kernels	41.3	1.0	6.0	1.5	46.6	3.6
Mixed Grasses (Rowen)...	18.4	7.1	10.1	22.8	36.0	5.7
Brewers' Grain Silage....	69.8	1.2	6.6	4.7	15.6	2.1

Analysis of Feeding Stuffs, of the More Common American Fodders, Grains and By-Products.

Name of Feed.	Dry Matter in 100 Lbs	Digestible Nutrients in 100 Pounds.		
		Protein. Lbs.	Carboby- drates. Lbs.	Ether Extract (Crude Fat) Lbs.
Green Fodders.				
Pasture Grasses, mixed...	20.0	2.5	10.2	0.5
Fodder Corn	20.7	1.0	11.6	0.4
Sorghum	20.6	0.6	12.2	0.4
Red Clover	29.2	2.9	14.8	0.7
Alfalfa	28.2	3.9	12.7	0.5
Cow Pea	16.4	1.8	8.7	0.2
Soja Bean	24.9	3.2	11.0	0.5
Oat Fodder	37.8	2.6	18.9	1.0
Rye Fodder	23.4	2.1	14.1	0.4
Rape	14.0	1.5	8.1	0.2
Peas and Oats.....	16.0	1.8	7.1	0.2
Beet Pulps	10.2	0.6	7.3	...
Silage.				
Corn	20.9	0.9	11.3	0.7
Corn, Wisconsin Analysis.	26.4	1.3	14.0	0.7
Sorghum	23.9	0.6	14.9	0.2
Red Clover	28.0	2.0	13.5	1.0
Alfalfa	27.5	3.0	8.5	1.9
Cow Pea	20.7	1.5	8.6	0.9
Soja Bean	25.8	2.7	8.7	1.3
Dry Fodder and Hay.				
Corn Fodder	57.8	2.5	34.6	1.2
Corn Fodder, Wisc. Anal..	71.0	3.7	40.4	1.2
Corn Stover	59.5	1.7	32.4	0.7
Sorghum Fodder	59.7	1.5	37.3	0.4
Red Clover	84.7	6.8	35.8	1.7
Alfalfa	91.6	11.0	39.6	1.2
Barley	85.2	6.2	46.6	1.5
Blue Grass	78.8	4.8	37.3	2.0
Cow Pea	89.3	10.8	38.6	1.1
Crab Grass	82.4	5.7	39.7	1.4
Johnson Grass	87.7	2.4	47.8	0.7
Marsh Grass	88.4	2.4	29.9	0.9
Millet	92.3	4.5	51.7	1.3
Oat Hay	91.1	4.3	46.4	1.5
Oat and Pea Hay.....	85.4	9.2	36.8	1.2
Orchard Grass	90.1	4.9	42.3	1.4
Prairie Grass	87.6	3.5	41.8	1.4
Red Top	91.1	4.8	46.9	1.0
Timothy	86.8	2.8	43.4	1.4
Timothy and Clover.....	85.3	4.8	39.6	1.6

Analysis of Feeding Stuffs, of the More Common American Fodders, Grains and By-Products.—(Continued.)

Name of Feed.	Dry Matter in 100 Lbs.	Digestible Nutrients in 100 Pounds.		
		Carbohy- drates. Lbs.	Protein. Lbs.	Ether Extract (Crude Fat) Lbs.
Vetch	88.7	12.9	47.5	1.4
White Daisy	85.0	3.8	40.7	1.2
Grain and By-Products.				
Barley	89.1	8.7	65.6	1.6
Brewers' Grains, dry.....	91.8	15.7	36.3	1.6
Brewers' Grains, wet.....	24.3	3.9	9.3	1.4
Malt Sprouts	89.8	18.6	37.1	1.7
Buckwheat	87.4	7.7	49.2	1.8
Buckwheat Bran	89.5	7.4	30.4	1.9
Buckwheat Middlings	87.3	22.0	33.4	5.4
Corn	89.1	7.9	66.7	4.3
Corn and Cob Meal.....	89.0	6.4	63.0	3.5
Corn Cob	89.3	0.4	52.5	0.3
Corn Bran	90.9	7.4	59.8	4.6
Atlas Gluten Meal.....	92.0	24.6	38.8	11.5
Gluten Meal	90.9	7.4	59.8	4.6
Germ Oil Meal.....	90.0	20.2	44.5	8.8
Gluten Feed	90.0	23.3	50.7	2.7
Hominy Crop	88.9	7.5	55.2	6.8
Starch Feed, wet.....	34.6	5.5	21.7	2.3
Cotton Seed	89.7	12.5	30.0	17.3
Cotton Seed Meal.....	91.8	37.2	16.9	8.4
Cotton Seed Hulls.....	88.9	0.3	33.1	1.7
Cocoanut Meal	89.7	15.6	38.3	10.5
Cow Peas	85.2	18.3	54.2	1.1
Flax Seed	90.8	20.6	17.1	29.0
Oil Meal, old process.....	90.8	29.3	32.7	7.0
Oil Meal, new process.....	89.9	28.2	40.1	2.8
Cleveland Oil Meal.....	89.6	32.1	25.1	2.6
Kaffir Corn	84.8	7.8	57.1	2.7
Millet	86.0	8.9	45.0	3.2
Oats	89.0	9.2	47.3	4.2
Oat Feed or Shorts.....	92.3	12.5	46.9	2.8
Oat Dust	93.5	8.9	38.4	5.1
Peas	89.5	16.8	51.8	0.7
Quaker Dairy Feed	92.5	9.4	50.1	3.0
Rye	88.4	9.9	67.6	1.1
Rye Bran	88.4	11.5	50.3	2.0
Wheat	89.5	10.2	69.2	1.7
Wheat Bran	88.1	12.6	38.6	3.0
Wheat Middlings	87.9	12.8	53.0	3.4
Wheat Shorts	88.2	12.2	50.0	3.8



SPRING BALANCE
LOUDEN
PARTITION

SPRING BALANCE
LOUDEN
PARTITION

VALUE OF LEGUMINOUS CROPS FOR FEEDING AS DISTINCT
FROM GRASSES.

Why should the farmer go on raising meadow hay as his main supply of coarse fodder and buying grain to supplement it, when by growing leguminous crops the nitrogen required by animals can be produced at the lowest cost? The crops of red clover, crimson clover, Japan Clover (*Lespedeza*), Velvet Bean, cowpea, alfalfa, soja bean, horse bean, serradella, and many others of this class far surpass common hay in the food materials they contain, both pound for pound and in yield per acre. They may be grown as catch crops and used for soiling or pasturage, or they may be grown for making hay or silage. By mixing the green crops with corn and ensiling the two together, a palpable and nutritious food is produced, which is much richer in protein (nitrogen) than silage made from corn alone.

The cultivation of these leguminous plants involves somewhat more labor, as a rule, than raising grass hay, but it will prove profitable, for it enables the farmer to raise his own concentrated feed at the same time that he raises his coarse fodder. For instance, experiments have proven that soja-bean meal is fully equal to cotton seed meal for milk and butter production. This meal is one of the richest feeding stuffs we have. It exceeds linseed meal and gluten meal in protein (nitrogen) and far exceeds these and cotton seed meal in fat. It is only surpassed in protein by cotton-seed meal and some of the oil cakes little used in America. The beans can be thrashed out and ground and the straw fed as coarse fodder. This straw is richer in food materials than good meadow hay. It contains about $9\frac{1}{2}$ per cent. of protein while meadow hay averages about $7\frac{1}{2}$ per cent. The cowpea may be treated in a similar manner. The ground cowpeas are a richly nitrogenous feed, although not as rich as soja-bean meal velvet beans are the equal of either, and

the vines are nearly or quite equal to clover hay, and far surpass grass hay in richness.

The following table is only intended to show the average composition of hay from leguminous crops as compared with hay from grasses, and indicates forcibly the value of legume hays over grass hays:

Average composition of hay from grasses and leguminous Crops

Hay from—	Water.	Protein.	Carbohy- drates.	Fat.
	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Red Top	8.9	7.9	76.0	1.9
Orchard Grass	9.9	8.1	73.4	2.6
Timothy	13.2	5.9	74.0	2.5
Hungarian Grass	7.7	7.5	76.7	2.1
Kentucky Blue Grass.....	15.0	8.2	78.1	4.4
Red Clover	15.3	12.3	62.9	3.3
Crimson Clover	13.4	14.0	55.6	4.1
Japan Clover	10.9	13.8	63.1	3.7
Alsike Clover	9.7	12.8	66.3	2.9
White Clover	9.7	15.7	63.4	2.9
Alfalfa	8.4	14.3	67.7	2.2
Cowpea	10.7	16.6	62.3	2.9
Serradella	9.2	15.2	65.7	2.6
Vetch	8.4	14.5	67.8	2.1
Soja Bean	6.3	14.5	66.6	5.6
Average for grasses	10.94	7.52	75.64	2.70
Average for leguminous plants..	10.20	14.37	64.14	3.23

It may be said in general that 100 pounds of hay from leguminous crops contains about twice as much protein as 100 pounds of hay from grasses. The leguminous hay may be safely estimated as worth from one-fourth to one-third more for feeding than common hay. This is true in spite of the fact that it does not usually command a higher price in the markets, owing to certain unfounded prejudices against its use.

AS FERTILIZED, ETC.

Assuming that the common grasses yield 2 tons of hay

per acre, and clovers, etc., 3 tons of hay, the amounts of food materials and fertilizing materials in the crops are approximately as follows:

Relative amount of food and fertilizing materials in crops of hay from grasses and from leguminous crops.
(This forcibly indicates the difference in value of the crops).

Hay from—	Assumed Yield per Acre.	Food Materials in Crop per Acre.			Fertilizing Materials in Crop per Acre.		
		Protein.	Carbo- hydrates.	Fat.	Nitrogen.	Phosphoric Acid.	Potash.
	Tons.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
Red Top	2	158	1,520	38	23.0	7.2	20.4
Timothy	2	118	1,480	50	25.2	10.6	18.0
Red Clover..	3	369	1,887	99	62.1	11.4	66.0
Alfalfa	3	429	2,031	66	65.7	15.3	50.4
Cowpea	3	498	1,869	87	58.5	15.6	44.1
Soja Bean...	3	435	1,998	168	69.6	20.1	32.4

The amount of hay produced on different farms varies so widely that it is difficult to strike an average, especially for the leguminous crops. It will be seen that on the above basis, which is believed to be a fair one, the leguminous crops furnish from two to four times as much protein per acre as common grasses, together with much more fat and rather more carbohydrates. They also contain nearly three times as much nitrogen and about twice as much potash. It should be remembered that under favorable conditions they may draw a large proportion of this nitrogen from the air, instead of depleting the soil, and that their long roots enable them to feed upon the potash deep down in the soil beyond the reach of surface-feeding plants.

A SUMMARY OF COMPARATIVE VALUES.

Green manuring improves the physical properties of the soil by making the soil more porous and adding to



its supply of humus. It brings up the dormant plant food from deep down in the soil and deposits it near the surface, where it can be used by plants feeding near the surface.

Green manuring with Hungarian grass, and other non-leguminous plants adds practically nothing to the soil which was not there before, except a mass of vegetable matter which decays and goes to form humus.

Green manuring with clovers, peas, beans, lupines, etc. (leguminous crops), actually enriches the soil in nitrogen drawn from the air. These plants can grow with very little soil nitrogen. They store up the nitrogen of the air as they grow, and when plowed under, give it up to the soil and to future crops. It is the cheapest means of manuring the soil with nitrogen.

But animals, as well as plants, require nitrogen for food. By feeding the crops of clover, cowpea, etc., only about one-fourth of the fertilizing materials of the crop is lost if the manure is properly cared for. As the nitrogen of the air is the cheapest source of nitrogen for plants, so it is the cheapest source of protein (nitrogen) for animals. The leguminous crop is best utilized when it is fed out on the farm and the manure saved and applied to the soil. The greatest profit is thus secured and nearly the same fertility is maintained as in the green manuring.

For renovating worn or barren soils, and for maintaining the fertility where the barnyard manure is not properly cared for, green manuring with such leguminous crops as cowpea, clovers, and lupines is recommended. A dressing of potash and phosphates will usually be sufficient for the green manuring crop.

The practice of green manuring on medium and better classes of soils is irrational and wasteful. The farmer should change his system so that the barnyard manure will be as well cared for as any other farm product. Loss from surface washing, leaching, fermentation, and decay

should be guarded against. Then the feeding of richer food will mean richer manure and better and cheaper crops.

The system of soiling, or feeding green crops in the barn in place of pasturage, enables a larger number of animals to be kept on a given area of land, and the manure to be more completely saved. For this purpose leguminous crops are extremely valuable.

Hay from leguminous crops is about twice as rich in protein as hay from the grasses. In the one case this protein (nitrogen) is obtained very largely from the atmosphere; in the other it is all drawn from the fertility of the soil. Leguminous crops yield larger crops of hay to the acre than grasses. Hence the production of food materials on an acre, especially protein, is several times larger with leguminous crops.

If allowed to ripen, the seed of the cowpea and sojo bean furnishes an extremely rich concentrated feed which can be ground and fed in place of expensive commercial feeds. The straw remaining may be fed as coarse fodder, for it is richer than ordinary hay; therefore

Grow Leguminous crops. They furnish the cheapest food for stock and the cheapest manure for the soil. They do this because they obtain from the air a substance necessary for plants and animals alike, in the form of fertilizers and feeding stuffs.

Grow grasses for pasture, and legumes for hay and soil building.

Green manuring, or plowing under green crops raised for that purpose, is one of the oldest means of improving the fertility of the soil. It was advocated by Roman writers more than two thousand years ago, and from that time until now it has formed a most important resource of the farmer, especially where the supply of barnyard manure is insufficient. Its advantages are many. The more striking are that it furnishes the surface soil with a supply of fertilizing materials needed by crops, in-

creases the humus, and improves the physical qualities of the soil. As a humus-former, green manuring stands next to barnyard manure.

By this means, land which is practically barren, may in time be brought up to a State of fertility where it will produce profitable crops.

Again, green manuring may be used to take the place of more expensive fertilizers and manures on soils already under cultivation. It is in this latter use that it finds its widest application.

It will be remembered that the principal fertilizing ingredients required by plants are nitrogen, phosphoric acid, and potash. These are each and all more or less essential to the healthy growth of crops. Consequently they are applied to the soil in the form of commercial fertilizers and other manures. In attempting to explain how the fertility of the soil is maintained by green manuring, it has been said that the plants with long roots, like clovers, feed deep down in the soil or subsoil on materials beyond the reach of surface-feeding plants; and that when the tops of these plants die down and are mixed with the surface soil, they enrich it much the same as an application of barnyard manure. This is undoubtedly true, but it fails to explain how such large quantities of materials can be obtained, especially when clover is grown continuously for a number of years. The question has finally been solved by one of the most interesting and important discoveries yet made in agricultural science. It has been found that certain plants can feed upon the nitrogen in the atmosphere and store it up in their tissues as they grow. They take their phosphoric acid and potash from the soil, but they obtain their nitrogen very largely from the air. Hence they draw from the air a material necessary to the growth of crops, which in the form of commercial fertilizers, as nitrate of soda, ammonium sulphate, dried blood, etc., is paid for at a fixed price per pound.

NATURAL PASTURES.

The natural forage plants vary as largely as the soils. Some adapt themselves to almost any situation, and are quite general in their distribution, while others are extremely local; some become more vigorous and abundant under frequent grazing, while others soon disappear with any change of surroundings.

THE FORMATION OF PASTURES.

With a climate favorable to an almost continuous growth, and with soil easily worked and promptly responding to good management, it is not difficult to secure permanent pastures of the highest quality; but in order to obtain the best returns, the same intelligent care must be used in their preparation and management as are given other portions of the farm.

The best pastures are those which contain the greatest variety of plants yielding palatable food for stock. These plants should be such as to make their greatest growth at different seasons, in order that there may be a continuous supply; a portion of them should be legumes, both for their superior fattening qualities and for their effect on the soil, and as large a proportion as possible should be perennials. Such a pasture cannot be made in one season, but requires time for its best development, and when once secured, its value and feeding capacity will increase yearly under good management.

Excellent pastures are sometimes made from the natural sod, but in most cases it is more satisfactory, and in the end less expensive, first to plow the ground and use it two or three years for corn or cotton, which will kill the wild broom-sedges and wire-grasses and change the character of the soil so that the cultivated grazing plants will be able to establish themselves so thoroughly as to prevent the growth of other and less desirable sorts.

The prairie lands make excellent pastures without plowing. The coming in of the carpet grass can be materially hastened by mowing an old pasture in July or August when the grass is maturing its seed and scattering the hay over the new field. Wet places should be planted with either roots or seed of the large water-grass, which grows well in such places and is especially valuable during winter. Many of the coast soils are so deficient in lime that it is difficult to secure a good growth of any of the clovers. Where the soil is not too light, lespedeza will do fairly well, and as its growth improves year after year, it pays to sow it in all pastures. On light soils which contain lime, like many of those in Florida, the Florida beggar-weed grows well, reseeds itself freely, and makes good summer and fall grazing, but yields nothing during the winter and spring months. It is very little trouble to make good pastures on the coast soils which have once been in cultivation, as carpet-grass takes possession of such fields very quickly. Bermuda will cover the more fertile spots, and the sowing of lespedeza or beggar-weed will provide the best leguminous grazing plants for these soils.

Rich and moist alluvial soils, like those along the rivers and streams, will finally become covered with a growth of Bermuda grass, but even on such lands the spread of the grass is slow, and the ground can be covered much more quickly if it is first plowed to kill the coarser growth and bring it into better mechanical condition. These soils make better pastures than do any other, as they are naturally the most fertile, most easily kept in condition, and will support a greater variety of plants. For these, as for all fertile soils, Bermuda is the best possible foundation, and should be planted as described elsewhere further on. As its season for good grazing lasts only six or eight months, it should have other species planted with it. Large water-grass and Terrell-grass will give good winter grazing along the water

courses and in damp places, while burr-clover and lespedeza should be sown on the drier portions. Along creeks, the borders of marshes, and other wet places red-top and alsike clover should be sown at the rate of a hushel of the former and two quarts of the latter per acre. On black soils four quarts of red clover seed may be added with advantage.

On the drier and hardened upland soils it is almost impossible to secure good pastures without previous cultivation of the land. The natural pastures in this region are all that can be desired during the summer and early fall, but fail quickly after the first frosts and do not become really good again until April. Here, as elsewhere, Bermuda and lespedeza are the best foundation for a pasture, as both make vigorous growths and both are permanent, although neither is of much value during the winter or spring. No grazing plant has been found which will make a satisfactory winter and spring growth on the dry, hard, clay, hill lands, and such localities can be depended upon for summer and fall grazing only.

On the steepy hillsides and on the lower lands the grazing season may be greatly extended and good permanent pastures are not hard to make by the use of the same plants which have been recommended for the alluvial soils. Burr-clover does well on these soils, and in many places wild vetches are abundant, beginning their growth in the early winter and making good grazing by February or March.

Where the soil is somewhat sandy, old fields are often made into pastures by mowing carpet grass and scattering the hay over the knolls and hilltops in the fall, and following this with lespedeza seed in the spring. It costs but little to seed a pasture in this way, and it is often the best plan to follow. The ground is sure to be covered with a good growth of crab-grass the first year, and by the second year the crab-grass and lespedeza will be scattered over the entire field. On many farm tempo-

rary pastures with annual plants in rotation with cultivated crops are more economical and satisfactory than are permanent pasture fields.

In the greater part of Florida, where the growing season is practically continuous, the above grasses can be largely replaced by carpet grass, while fewer perennials and more annuals can be used to add to the yield and variety. Crab grass and Mexican clover are everywhere in cultivated fields from which the crops were removed by mid-summer, and on many of the native pastures beggar-weed is the predominant growth. In the larger part of Florida, only a very small proportion of the land, comparatively, is in cultivation, so that the cattle have such an abundant range in the woods, that the need of permanent pastures has scarcely been felt as yet, and but little attention, comparatively, has been given to the cultivated grazing plants. On the natural ranges and old fields, cattle will make a good gain for six months, about hold their own for three months, and will need feeding during the other three months to keep them in good condition. As the proportion of cultivated lands increases, the ranges and permanent pastures will become as important in Florida as elsewhere.

THE ESSENTIALS OF A GOOD PASTURE.

In general, the making of good permanent pastures is, to some extent, difficult. There is no one grazing plant which continues in active growth through the entire year, and the best growth of most species is made in the course of three or four months. Some make nearly their whole growth in the early spring months, others do not begin their growths until killed by frost, while still others begin their growths with the summer and fall rains and mature their seed in the winter or early spring. When one species has completed its growth, or becomes dormant for a few months, others are ready to take its

place at once, and so a constant succession is maintained. This feature is one of the immense advantages in Florida.

SELECTION OF VARIETIES.

With such constant changes it is often difficult to select species for a mixture, each of which will hold its own without overgrowing weaker species, or being crowded out by its stronger neighbors, as the best plants for permanent pastures must be either perennials or annuals, which reseed the ground freely and surely; they must be adapted to soils of widely different character, their roots must be able to endure continued drought, and they must be palatable to all kinds of stock. No one species will cover and hold the ground throughout the whole year, and so it is necessary to use a mixture of several kinds, at least one of which should be a legume, and it is difficult to arrange these mixtures so that they will be suited to the widely varying soils, or even to the different soils which are usually found on a single farm. Whatever may be planted will usually prove to be only the foundation of the pasture, as every locality has native or naturalized species which will finally occupy a considerable portion of the ground, and often some of these self-introduced sorts will prove as valuable as many of those which have been introduced and deliberately planted. For practically the whole of the State, excepting the sandy soils near the coast, Bermuda and Japan clover is probably the best foundation for every permanent pasture. On alluvial lands add red-top and alsike clover for the damper soils, with orchard grass, sweet clover, and hurr clover for the drier lands. On the uplands, yellow loam, and clay sections, orchard grass and hurr-clover do very well on the dry soils, while for wet places, red-top, large water-grass, and alsike clover should be added. On the light soils of the coast, carpet grass, large water-grass and giant beggar-weed replace the red-top and clover.

TEMPORARY PASTURES.

In a region where it is so difficult to secure perennials for permanent pastures, and where the growing season is so long that two or more crops can be grown on the same land yearly, temporary pastures of quick-growing annuals will always be largely used, and in many sections will afford the most economical grazing for different seasons. Fields from which oats, melons, potatoes, and other early crops have been removed, make fine pastures from July until the end of summer and into fall. Cornfields in which cowpeas and velvet beans have been planted, make the best of fall and early winter grazing, while oats, rye, rape and vetches make abundant and nutritious winter feed. These can be grown on land from which early crops have already been taken. They cost nothing but the seed for the sowing, and on many soils heavy volunteer crops give fine grazing for three or four months with absolutely no cost. Under such conditions, temporary pastures are not makeshifts, but are an important part of a well arranged rotation.

Among the most valuable plants for summer and fall grazing in Florida, are crab-grass, crowfoot, Mexican clover and Florida beggar-weed, all of which make volunteer growths so late in the season as not to interfere with other crops, and will cover and protect fields which would otherwise be idle. Crab-grass is abundant everywhere in cultivated land. Crowfoot is a close second to crab-grass and is possibly of a little higher feeding quality. Mexican clover is more abundant near the coast, where it is usually found in fields with crab-grass, but is valued less for grazing than for hay. Beggar-weed is more abundant in Florida than elsewhere, and fields containing a mixed growth of that plant, crab-grass and crowfoot are unexcelled as pastures. Where it does so well it is regarded as the most valuable plant for summer and fall pastures. It is eaten by all kinds of stock

and is fattening, but as with clover, horses and mules must have grain in addition when doing hard work.

For later grazing the same plants may be used, and cowpeas and velvet beans, together with pickings from the corn and hay fields, make the fall pastures rich and varied in favorable seasons; but in seasons of severe drought they may become poor and dry, and it is in such seasons more than at any other time that silos and soiling crops are needed. Although cowpeas do not bear grazing well, they make the best feed and are often more profitable when used for pasturage than when used in any other way. Velvet beans can be grazed late into fall. The droppings from the grazing animals are left in the field and serve to maintain the fertility of the soil. On very light or sandy soils the plowing under of the vines is less beneficial than the trampling of the stock and the addition of the manure. While it is more profitable to cut the vines for hay when grown by themselves, pasturing them is usually better when they are grown in cornfields. The fertilizing value of the crop is worth more than the cost of the seed, so that the pasturage is all clear profit.

WINTER PASTURES.

For winter grazing, oats, rye, barley, and hairy vetch are the most successful crops, and a mixture of oats and hairy vetch has given more satisfactory results than has any other winter grazing crop which has been tested. The rust-proof oats are more hardy than are most other varieties. They stool very freely, often sending up 100 or more stems from a single root, and they bear close and long continued grazing without injury. For winter grazing they should be sown late in October or early in November though December sowing may be made for early spring feed.

These oats ripen earlier than do most other varieties,

and the yield of grain is about the same or better. Ordinarily they are entirely free from rust.

AS TO PASTURE GRASSES.

The More Important Hay and Pasture Grasses.

Following are the more important of the native or cultivated hay and pasture plants grown in Florida. A good many of these are seen in other sections of the country also, but many are native and all are well adapted to Florida, and afford pastures or hay not surpassed by those in any country.

BERMUDA GRASS.

Bermuda grass is the foundation of all the best permanent pastures in the South, likewise in Florida, and in many localities is important for hay. It endures severe drought without much injury, makes excellent grazing from late spring till heavy frost, and yields a fine quality of hay. It requires a rich and fairly moist soil for its best growth, being dwarf and spreading in habit when on hard clay or light sandy soils, but becoming more erect and dense as the fertility of the soil is increased. It is one of the best grasses for creek and river bottom lands, for binding levees and ditch banks, and for lawns which have good care. It is propagated by either seed or roots. When seed is used, the ground should be well prepared with a fine, smooth surface, as the seeds are small. The seeds should be mixed with cotton-seed meal or fine soil to increase the bulk, so that they will be distributed more evenly. They should be sown in March or April at the rate of 5 pounds per acre, and may be covered by using a roller or light smoothing harrow. As the seed is expensive and somewhat uncertain in germination, Bermuda grass is usually propagated by planting small pieces of the runners or joints, but being indigenous to Florida, it propagates itself spontaneously.

When a field is to be used as a meadow, it should be

well prepared and pieces set 2 to 3 feet apart. This may be done at any time from March until August. Very little care is necessary in planting. The common method is to cut pieces or joints from an old field and separate into small pieces. These are dropped at the proper distances and forced into the ground with a forked stick such as is used in planting sweet potato draws. When planted for pasture, it is not so necessary to have the surface of the ground smooth. A common method of planting is to run furrows 3 or 4 feet apart, drop pieces of sod at intervals of 2 or 3 feet, and cover with the foot. The grass will seldom do much more than cover the ground the first season, but when a good sod is once formed, it will last indefinitely. The yield of hay on rich bottoms may be as much as 4 tons per acre, less on poorer soils, and on dry clay hills not worth harvesting, though it makes good grazing. The feeding value of the hay is about equal to that of timothy.

The planting of this grass is objected to by some on account of the difficulty of eradicating it when the field is wanted for other uses. With proper management, however, this is usually not a serious matter. It is difficult to kill it with even the most persistent cultivation, but it is easily destroyed by any dense smothering crop which keeps it heavily shaded. Plowing the ground in late summer, sowing oats and vetches, and following that with a summer crop of cowpeas or velvet beans will kill nearly all of the grass. This method will furnish two profitable crops, besides putting the soil in fine condition for any successful crop of

CARPET GRASS.

Carpet grass is to the light and sandy soils what Bermuda is to the heavier soils. It reaches its greatest perfection on the light soils where it "comes in" very quickly when the land is pastured or heavily trampled. Its creeping habit of growth enables it to bear close grazing with-

out injury. It is strictly a pasture grass, seldom growing large enough to be worth cutting for hay. It will stand close grazing and heavy trampling better than any other grass, in fact, a considerable amount of trampling seems necessary to its best growth, as it disappears when stock is taken from the field or the land is put into cultivation.

The usual method of propagation is to cut some of the grass which has been allowed to mature seed and to scatter the hay over the pasture in which it is wanted. Little seed is produced where the grass is closely grazed, but when the stock is taken from the field in July or August an abundant supply can be secured in September or October. It grows readily when scattered on the surface of the ground, and comparatively little seed is needed. When even a few patches become established in a pasture it soon spreads over the entire field, and on a field which is well trampled it will make a good sod in about two years, even where the ground has never been plowed. A quicker and surer method of propagation is by transplanting joints, as Bermuda is propagated, but this is much more laborious and expensive.

Although it makes little growth after the first heavy frosts in the fall, it furnishes good winter grazing if the stock has been removed from the field in July or August, for it will make a growth of 6 to 12 inches by November, and the lower stems and leaves which are protected from frost will remain green and give fresh grazing through the winter, but the pastures which have been grazed closely all summer give little winter feed. Like Bermuda grass, it needs sunshine for its best growth, though it makes considerable good feed in wooded pastures and brush land.

PARA GRASS.

Para grass, which is probably native to South America, is now common in some parts of Florida and is rap-

idly coming into favor. It is best adapted to Florida and the Gulf Coast. It is a rank growing perennial, spreading by runners, often 30 or more feet in length, which form roots at each joint that touches the ground. As soon as the ground becomes fairly well covered with these runners, erect or ascending branches are produced, reaching a height of two to three feet or more and producing a heavy yield for either hay or grazing. Although Para grass spreads so rapidly by its long runners it is more easily killed than Bermuda, as the runners are wholly above the surface of the ground and can be destroyed by a single shallow plowing late in the fall, followed by a thorough harrowing. In regions where heavy frosts occur, it is killed by plowing alone, if the work is done at the beginning of cold weather. While it makes a fair growth on moderately dry soil, it does much better where the ground is wet, and on the margins often reaches to where the water is 3 or 4 feet deep. It is a desirable species for planting on lands liable to overflows, as it is not injured when covered by water for a month or more.

Para grass produces little good seed and is usually propagated by divisions of the runners. These root easily if cut into pieces of two or three joints each and pushed into freshly plowed ground so as to leave the upper joint just at or a little below the surface. When sets are abundant it is better to put them about 2 feet apart. Planting may be done at any time from early spring until about three months before frost is expected. It makes a rather coarse hay, but is sweet, tender and nutritious, and the yield is very heavy. Florida growers make three to four cuttings annually, and the hay finds a ready market at a high price. It is also an excellent pasture grass when not grazed too closely. A field which is well set with the grass may be kept in good condition almost indefinitely if it is given a shallow plowing in the spring and then seeded with cowpeas. The grass will

then make a vigorous growth and the first cutting will be ready when the peas begin to mature, the mixture making a hay of choice quality and a better yield than when the grass is grown alone. The pea vines will make no further growth, but the grass will make two to four later cuttings, each heavier than if the ground had not been plowed.

Growers who have it thoroughly established in their groves complain that Para grass makes cultivation difficult, and that it is seldom advisable to allow it to gain a foothold on land which is to be cultivated. In the extreme southern part of Florida, where the rainfall is heavy and frosts are rare, it might become a dangerous weed, but it is easily killed by withholding the water a short time. It is killed to the ground by heavy frosts and is not recommended for planting where the temperature falls below about 18 degrees F. This, however, makes it safe in about all parts of Florida.

GUINEA GRASS.

Guinea grass, a native of Africa, is now a common grazing grass in Cuba and other West Indian islands, whence it was introduced into Florida as early as 1870. Though very different in appearance and habit of growth, it has often been confused with Johnson grass, which has been called by the same name. Johnson grass spreads by long, fleshy underground rootstocks and has seeds which are of a red, yellow, or nearly black color, while Guinea grass grows in dense erect clumps, does not spread by rootstocks, and has seeds which are dark green in color. The leaves of Guinea grass are never streaked with red or yellow, as those of Johnson grass often are. Anyone who notes any of these characters will never mistake one grass for the other.

Guinea grass grows to a height of 6 to 12 feet and is used principally for grazing and soiling. Its range of profitable cultivation is about the same as that for Para grass, including the whole of Florida. It does well on

moderately dry soil and can never become a pest like Johnson grass. It is propagated by divisions of the roots or by seeds. When roots are used the old clumps should be dug out early in March and divided, a single stem with a few good roots being sufficient for a set. If planted about 3 feet apart in rows 6 feet wide, the young plants will give a good cutting or be ready for grazing in May. Seeds are planted at the same season as the roots, the usual practice being to plant them in drills and then to transplant the seedlings when they are 3 or 4 inches high. Volunteer seedlings are often found in abundance where the old plants have been allowed to mature seed. Sets are more expensive and troublesome than seedlings, but will give an earlier and heavier yield the first season.

When the crop is to be used for soiling and heavy yields are expected, the ground should be occasionally cultivated and a dressing of cottonseed meal given just before each cultivation. The grass begins its growth rather late in the spring, seldom giving much feed before May, but after that time it will give good cuttings once every three or four weeks until its growth is stopped by frost. In the most favorable part of the season cuttings may be made every 10 or 12 days, though such a rapid growth is maintained for only a few weeks. It makes the best feed if cut when 18 or 24 inches high. If allowed to stand too long the stems become hard and woody. It is difficult to even estimate the yield per acre, as it is used principally for grazing and soiling, its habit of growing in large clumps making it hard to cut for hay. It is claimed that it will feed four head of cattle per acre through the entire season, and also that it is the best of all grass for either grazing or hay.

RHODES-GRASS.

Rhodes-grass, a newly introduced species, is a native of central and southern Africa, where it is regarded as one of the best species for pastures on dry soils. It is per-

ennial, growing from 3 to 4 feet high, with a large number of very long, narrow and tender leaves and with rather few branching stems.

When grown from seeds its growth is commonly erect the first season, but when grown from roots, or the second season when grown from seed, it makes runner-like branches 2 to 4 feet long, which root at the joints and so cover the ground quite rapidly.

It is propagated both by seed and roots. When seed is used it should be sown at corn-planting time at the rate of about 10 pounds per acre on a soil having a fine mellow surface, and then given a light harrowing. As the seed is produced only in small quantities and as it continues to be developed and matured through the entire season, little of it can be gathered at any one time; consequently the grass is more commonly propagated by roots. The roots may be planted on well prepared land at any time from February to July, putting them 2 to 4 feet apart and protecting them from grazing until they become well established. This grass has been introduced so recently that seed is still scarce in the market.

While the principal value of the grass is for grazing, it is also used for hay, giving two or three cuttings of about 1 ton each per acre. The hay is of excellent quality. It bears severe drought and moderate frost without injury, but is easily killed by plowing late in the season. It is not recommended for cultivation except in the eastern and southern parts of the State. It makes a hay equal to Northern Timothy.

NATAL GRASS.

Natal grass, from South Africa, is much like crab-grass in habit of growth, but where the soil is very sandy it makes a heavier yield of better hay. It has become thoroughly established in parts of Florida and is gradually spreading over the sandy coast lands to the southward. The roots are killed by heavy frosts, but from central

Florida southward it becomes perennial and is used occasionally for permanent meadows. Further north it is an annual, making a volunteer growth in fields from which early crops have been gathered and often producing a heavy growth in cornfields after cultivation ceases. It very much resembles redtop, but is totally distinct.

CRAB-GRASS.

Crab-grass is a native grass of considerable importance as a volunteer hay crop, especially on sandy soils. It makes its growth late in the season on lands from which early crops, like oats, melons or potatoes, have been taken and often makes a good growth in fields of cowpeas, where it adds largely to the yield of hay. The crop should be cut early, soon after the first seeds begin to mature. It is somewhat difficult to cure, but when well handled at the proper stage of growth it makes a hay of good quality. It is always a volunteer crop and need never be sown. Its feeding value is almost equal to Timothy and is far more valuable for feeding than is generally supposed.

ORCHARD-GRASS.

While orchard-grass seldom makes a heavy yield of hay in Florida it is an excellent pasture grass on wet and heavy soils. It is a perennial which begins its growth very early in spring and is ready to cut in April. It furnishes good grazing until its growth is checked by the summer drought. With the first autumn rains it starts a new growth of leaves, making rich fall pasturage and remaining fresh and green through the winter when the cold is not too severe. The hay made from it is of excellent quality, though its habit of growing in large clumps is against its use as a hay grass. It bears grazing well and recovers quickly when cropped down. It does well when mixed with redtop and succeeds better than almost any other grass in woodland pastures. Sandy soils are not well suited to its growth, and it is not recommended

for light, thin lands. Seed should be sown in August or September, or very early in the spring, at the rate of 20 to 30 pounds per acre.

RYE-GRASS.

Two species of rye-grass, Italian (*Lolium multiflorum*) and perennial (*Lolium perenne*), are commonly cultivated. The former, while not truly an annual, is agriculturally treated as such. It makes a more rapid and usually a larger growth than the latter. Both are quickly injured by excessive heat or drought and so are not suited for permanent meadows or pastures, but as they make a quick and vigorous growth soon after planting, they are valuable where immediate results are wanted. They are especially desirable for sowing with newly planted Bermuda, red-top and other slow-starting grasses. If sown in the fall, they will give rich late-winter and spring grazing, or they may be cut for hay in April or May, after which they soon disappear. It is important that the crop be cut as soon as well grown. If that is not done the warm rains of June and July will cause the leaves to decay very rapidly and smother the small plants and other grasses which may be growing on the same ground. On rich alluvial lands these grasses often persist two or three years when used for hay, but seldom last more than one year when grazed. They are among the best of grasses for planting on newly-made lawns, as they soon cover the ground and give it an attractive appearance, while the Bermuda and other slower starting sorts are becoming established. Seed should be sown in October or February at the rate of 20 to 30 pounds per acre when sown alone, or half that amount when sown with other grasses. Italian rye-grass is becoming more and more used for fall planting on the sandy coast lands. It makes a much better winter pasturage or hay than rye. It affords the prettiest and most

attractive lawn of any of the grasses used for that purpose.

RED-TOP, ON HERD'S-GRASS.

While redtop is seldom used alone for either hay or grazing, it is an important factor in both meadows and pastures. It is slender in growth, and the yield is not large, though the hay is of good quality. It makes its best growth on soils too poorly drained for most other crops, and therefore is important on all wet lands. Redtop is a perennial which bears frost and so gives winter grazing. It does better on wet clay soils than on those which are sandy and has little value for dry uplands. It is one of the best kinds for creek banks, and margins of swamps, overflowed lands, and similar places where Bermuda grass and other upland kinds cannot be grown. Seed may be sown in either fall or spring at the rate of 6 to 10 pounds of cleaned seed per acre. The growth is usually weak the first year, but it gains vigor with age and holds the ground well against other grasses. While redtop will make a fair growth on land which has not been plowed, it pays to prepare the ground well when large fields are to be sown. If from 4 to 6 pounds of the redtop seed are mixed with from 30 to 40 pounds of Italian rye-grass, a good crop of the mixture will be secured the first season, after which the rye-grass will gradually disappear and the redtop will occupy the ground. Unless the fields are cultivated, this grass will become permanent and form an all-year-round pasture.

RESCUE GRASS, SCHRADER'S GRASS, OR AUSTRALIAN OATS.

Rescue grass, Schrader's grass, or Australian Oats is sometimes highly valuable and at other times disappointing. When planted on a very rich loamy soil and the season is favorable, it makes a heavy winter growth, which affords fine grazing from December to April, or a heavy yield of hay in early spring and often a second

cutting later. If the conditions are not favorable, it may not begin its growth until late winter, only a poor stand will be secured, and its growth will be weak and unsatisfactory. It disappears on the approach of hot weather, but a few of the plants will live through the summer and with the scattered seed will often make a good volunteer growth the following season. Its growth and behavior are so uncertain that it is a reliable hay plant in only a few localities, but its winter growth makes it a desirable addition to pastures, especially for mixing with orchard grass, bur-clover and vetches. It makes its best growth only on freshly plowed land and seldom persists many years where other grasses are allowed to form a sod. Seed should be sown in August or September at the rate of 30 to 40 pounds per acre.

CROWFOOT GRASS.

Crowfoot grass is a common grass in cultivated ground, coming up as a volunteer crop after oats, melons and other early field crops have been harvested. It is usually more or less mixed with crab-grass, Mexican clover and beggar-weed and is highly valued as a hay plant. It comes up so late in the season that it is rarely troublesome as a weed. Many feeders prefer it to crab-grass, as it cures more easily. It appears to be very abundant in Florida, and in many sections of the State, much of the hay saved for home use is from this grass, grown in cornfields. Crowfoot hay is of good quality, though the yield is seldom more than one ton per acre when the grass is grown alone; it is often double that amount when mixed with Mexican clover or beggar-weed.

TALL MEADOW OAT GRASS.

Tall meadow oat grass is a valuable hay and pasture grass. It starts early in spring and lasts until late fall; gives two good cuttings per season. The hay is more nutritive than Timothy and the yield twice as great. It

matures at the same time as orchard grass and gives good results sown with it and red clover. Sow three bushels per acre in either spring or fall.

SUDAN GRASS.

Sudan grass is quite similar in general appearance to Johnson grass. It usually produces a taller, more erect stem than Johnson grass, and the leaves are larger and more abundant, making it especially valuable for hay. The most important difference between Johnson grass and Sudan grass is that the latter grass does not possess the underground root stocks by which Johnson grass is propagated from year to year and which render it such an undesirable plant on most farms. While Sudan grass is free from these underground root stocks, extreme care must be exercised to see that this crop is not grown in close proximity to fields of Johnson grass, as the two plants cross readily, which would finally result in the Sudan grass becoming perennial rather than annual in its habits of growth. It is also especially important when seed is secured to see that no Johnson grass seed is present. In fact, the only safe plan is to buy certified seed; or in other words, seed from fields that have been inspected by some competent person to determine whether or not there is any Johnson grass present or any other undesirable condition.

Under favorable conditions Sudan grass will yield from two to three cuttings, and some cases four cuttings, per season. The yield of hay varies, ranging from one to eight tons per acre, an average yield being three and a half or four tons. This grass produces an abundance of seed and at the present time is being more largely grown for this purpose than as a hay plant.

While Sudan grass has been found to grow successfully on most all soil types, ranging from extreme sands to stiff clays, it makes its best growth on rich, loamy soils. It is necessary that the soil be well drained, and

as a usual thing the use of nitrogen supplying fertilizers proves profitable.

It is best in preparing the seed bed for Sudan grass to plow the land in the spring rather than in the fall. The primary reason for this is that the Sudan grass requires a warm seed bed. Spring plowing leaves the soil in a rather loose condition in which it warms up quite readily. It must be remembered, however, that it is possible to get the soil too loose and good results are often obtained by using some form of sub-surface packer after plowing.

The date of seeding is usually about the same as for corn or perhaps a little later. Nothing is to be gained by planting the seed while the soil is still cold, as this usually results in poor germination or a weakened condition of the plants. The best method of planting the seed is that of using an ordinary grain drill. This grain drill distributes the seed quite uniformly, provided clean seed is used. In regions of abundant rainfall, the highest yields of the best quality hay are produced as a result of either broad casted or closely drilled seed. In the drier sections of the country it is advisable to seed this crop in 3½ foot drills, or where suitable cultivating instruments are available, the crop may be seeded in 18 to 24 inch drills. Broadcast seeding requires from 16 to 24 pounds of seed per acre. The larger amounts are used in humid sections, whereas in arid sections 16 pounds of seed per acre are sufficient. When seeded in 18 to 24 inch drills, about five pounds of seed per acre are required, while seeding in 36 inch drills requires about three pounds of seed per acre. Cultivation is similar to that of any other winter tilled crop.

When grown broadcast for hay, it is usually harvested by means of a hay mower. It is easily cured and makes hay of a most excellent quality. When grown for seed, it is customary to harvest the crop with an ordinary grain binder which ties the grass in bundles. These

bundles are later shocked in the same way as for small grains. For Hay making, Sudan grass should be harvested shortly after the blooming stage. For seed production the crop should not be harvested until the more advanced plants are mature and the seed beginning to shatter.

JAPAN CLOVER.

Japan clover may be classed among the most valuable leguminous hay and pasture plants of the State. It is a native of Japan, which was introduced into this country about 1830, and is now thoroughly naturalized over the whole country south of the Ohio River. It grows on all soils, but does best on good loams containing a fair amount of lime. It will also grow on hard, dry clay and even where the soil is quite sandy. On thin soils, its growth is very flat and spreading, while on better soil, it becomes erect, and is often two feet in height. It endures heat and drought without injury, and stock eat it greedily. It never causes bloating, but occasionally has a slight salivating effect on horses, though that appears to occur in only a few localities. It starts late in the spring, but from May until after heavy frost it gives the best of grazing, and should be in every pasture. Although mostly used for grazing, it is a valuable hay plant, making a good yield of from 1½ to 2 tons per acre. When wanted for hay, it should be sown early in the spring, at the rate of one-half bushel per acre, or it may be sown with oats in the fall, as it makes but little growth before the oats are harvested. For pastures, it is necessary only to scarify the surface of the ground with a disc harrow, and it will often grow well without any previous preparation of the soil.

MEXICAN CLOVER.

Mexican Clover, sometimes called "pusley" or "purslane," though entirely different from the plant known

by those names in the North, it is not a true clover, but belongs to the same family as the madder, poverty weed, and a number of other common plants. It is an annual of much the same habit of growth and size as common red clover, but the leaves are opposite and simple instead of alternate with three leaflets. It grows most abundantly in cultivated fields from which early crops have been removed, but often makes a heavy growth in corn and cotton after those crops have been laid by. It is seldom planted, as, like crab-grass and beggar-weed, it makes a volunteer growth late in the season. It is doubtful if the yield would be increased materially if it were sown early and the ground given up to it through the whole summer. It is common in old fields near the coast. It makes a fair growth on soils too poor for most other crops and may be used both for hay and for grazing. While the hay is not of the best quality, it is eaten readily by most animals, as it is usually more or less mixed with crab-grass and beggar weed, it adds largely to the bulk and value of an inexpensive crop. When used for grazing, it is more valuable for hogs than for other stock, though eaten well by mules and cattle. It can be grazed from about June until after heavy frosts and then will reseed the ground abundantly.

The seeds are very small and difficult to save, though they are sometimes beaten out with flails or gathered from the bottom of a mow in which the hay has been stored. From four to five pounds per acre are sufficient for seeding, but the common method of distributing the plant is by mowing after some of the seed is matured and scattering the hay over the field on which the crop is wanted the following season.

While it is not a nitrogen gathering plant like the true clovers, its growth is usually volunteer and so costs nothing, but it protects the surface of the ground from the scorching sun in the summer and washing rains in winter, and adds to the fertility of the soil by furnish-

ing humus. The plant should be regarded as an inexpensive substitute for something better, rather than as one to be carefully planted and cultivated. It is a better pasture plant than its description suggests.

BARNYARD GRASS.

Barnyard grass is an annual which stems singly or in clumps; is erect, sparingly branched and 3 to 6 feet high. The leaves are very long and abundant; the panicles heavy and compact and spikelets awned or awnless.

This requires a rich and somewhat moist soil, its name, "barnyard" grass indicating the locality which it prefers. It is a coarse and succulent grass which is not easily cured into hay, but it is quite valuable for soiling and for the silo, as it yields heavily and produces an unusually amount of seed. In some sections of Florida it makes a good part of the volunteer growth which is used for hay. Hundreds of acres are annually mowed, and farmers who have tested it thoroughly for many years prefer it to the best corn fodder.

CEREAL GRASSES.

While these grasses are quite different from the foregoing they all nevertheless can be pastured successfully, and a number of them are among the best for that purpose, especially for fall and early winter pasturing as well as for hay.

Wheat, oats, rye, barley, and to some extent rice are used both for winter pastures and for hay. All except rice are usually sown in the fall, as they then give good grazing through the latter part of the winter. If the stock is taken off just before the stems begin to shoot, a fair crop of hay can be made by cutting the wheat when it is in the milk stage and the oats when a little riper. Spring-sown oats also make fine hay, but do not usually yield as well as those sown in the fall. Rye and barley make poor hay, but are excellent for winter and spring

grazing. For most winter grain crops about one and one-half bushels of seed are used per acre; for oats the quantity of seed is usually a fourth or a half greater. In many parts of the rice districts good hay is made from the fields which have been cut for the grain. Such fields usually make a considerable second growth and may even head well, but seldom mature good seed. The land on which such hay is made must not be flooded while the second growth is coming on, or the leaves will become covered with sand and mud and make the hay dangerous for feeding.

SWEET SORGHUM.

Probably more acres of sweet sorghum than of any other crop are grown for soiling, and it is used largely for hay. It can be used from May to January and makes a very good quality of rather coarse hay. When wanted for hay it is sown very thickly to prevent a too coarse growth and then cut as soon as the heads appear. When planted early two cuttings may be made in the northern part of the State, while in the central and southern parts three or four cuttings are sometimes made from a single planting. The yield of hay is often very heavy, the amount depending largely on the richness of the soil and the length of the growing season. Crops for soiling should be planted in rows four feet apart and cultivated at least once after each cutting. The last cutting made in the fall is sometimes windrowed like sugar cane and sometimes shocked and allowed to stand in the field until used, as it keeps in good condition two or three months when treated either way. When matured stalks are fed it pays to run them through a feed cutter or a shredder and if they have been in shocks for some time to wet them well before feeding. It is one of the best crops for grazing hogs, and cases of the poisoning of cattle when grazing on it late in the season in the South are extremely rare. The varieties in most common use are the Amber for

early and the Orange for a heavier yield and a succession of cuttings. The Sumac or Redtop variety is in most places much superior to the Orange. The Gooseneck is also a desirable variety. These sorghums will sometimes on rich land yield as much as ten to twelve tons of dry feed per acre.

TEOSINTE.

Teosinte needs a long season of warm weather, a rich soil, and abundant moisture in order to succeed well, and it is useless to plant it where all those conditions can not be had. It is a remarkably vigorous grower, reaching 10 or 12 feet in height, with an unusually abundant supply of leaves and slender stems which continue to grow until killed by frost. It is planted and cultivated like corn, and if cut when it reaches four or five feet in height makes excellent fodder and will produce a second cutting fully as large as the first. If left to grow until September or October it furnishes excellent material for the silo in greater quantity per acre than either corn or sweet sorghum. It is also one of the best plants for soiling purposes. The plants stool freely, sometimes as many as fifty stalks growing from a single seed; its leaves are similar to those of sweet sorghum, but much longer, and the stalks contain 8 to 10 per cent of sugar. Its growth is very rank, the Louisiana station reporting a yield of over fifty tons of green feed per acre on rich alluvial soil. Its season of growth is so long that it seldom matures seed north of latitude 30 degrees N., but it has ripened well at the Florida and Louisiana experiment stations. The seed, four to five pounds per acre, should be planted in hills four to five feet apart each way at about the time cotton is planted. The greater distance should be given on the richer soils. This is a splendid crop for South Florida, but is not suited to North Florida because of its tender growth.

LEGUMES—THEIR IMPORTANCE.

Leguminous plants, those belonging to the pea and clover family, should be grown in every permanent meadow and pasture, as they make a large increase in the total yield, their mixture with the grasses makes the feed of better quality, and their cultivation adds to the fertility of the soil. Many of them are annuals, and so can be used as catch crops. Some make their growth during the summer, others grow only during the winter, while still others are perennial and continue a vigorous growth for many years. Many of the annuals reseed the ground freely, and so are easily grown from year to year. Few of the perennial sorts bear grazing as well as some of the grasses, while some of the annual sorts are among the best of pasture plants. The hay made from the legumes is especially valuable for young and growing animals, for animals which are being fattened, and for those which are not doing hard work. For hard-working milking and cultivating season, hay made from grasses, or a mixed hay, is preferable to one made wholly from legumes.

The legumes are not only valuable for hay and pastures, but they are also the best plants which can be used for green manuring, which is of the highest importance in the cotton region, where the supply of humus and consequently of nitrogen in the soil becomes exhausted rapidly with the clean cultivation given to cotton and corn and the constant warmth of the soil. In few other parts of the country is green manuring more necessary or more profitable than in the South, and the growing of legumes provides a large part of the fertilizer needed for other crops. On this account they should be included in every system of rotation, if possible, and follow every crop in Florida.

BUR CLOVER.

Bur clover is strictly a winter-growing annual and will

succeed on a wide range of soils. While it does not make a hay crop it furnishes a large amount of grazing for cattle, sheep and hogs at a season when other green feed is scarce. Horses and mules do not eat it well. There are two kinds in cultivation, the spotted and the California, the former being the stronger grower and the more desirable. The hulled seed sold by dealers is usually of the California variety, while the spotted hnr clover, the one more commonly grown in the South, is usually sold in the bur. As the hurs always retain small particles of soil when they are gathered from the ground, no other inoculation is needed when they are used, while the cleaned seed must be inoculated as for alfalfa and the clovers. Spotted hnr clover is also more hardy than the California, resisting frosts that the latter will not. We advise planting only in Florida the variety known as the Georgia. It is an excellent winter grazing plant. Few are better.

COWPEAS.

Cowpeas are grown more widely in the cotton region than any other leguminous crop and should have a place on every farm. They vary greatly in habit and time of growth. Some varieties produce long, trailing vines, while others are usually erect and bushy in growth; some ripen in two months from planting while others require four or five months; even the same variety varies greatly when planted on different soils or at different seasons. Cowpeas are inexpensive to grow and make a good growth on all soils except those which are very wet. They are excellent for hay or grazing and are the best summer catch crop for green manuring and improving soils. Though this crop will make a fair growth on very poor soil, it responds quickly to an application of fertilizer, and as a heavy growth of cowpeas is the best possible insurance for a heavy following crop it pays well to

use any fertilizer which will produce a more thrifty growth of vines.

Cowpeas may be sown broadcast or in drills three to four feet apart, the first method requiring more seed and less labor, while the drills permit of one or two cultivations, require less seed, are more easily mowed for hay, and usually give a heavier yield. From four to six pecks per acre are used in broadcasting and from two to three pecks for seeding in drills, though even two quarts of some varieties are sufficient when carefully dropped by hand. A common and excellent practice is to sow them between the rows of corn just before the last cultivation.

When cowpeas are sown broadcast with a small growing variety of sorghum, like the Amber, using a bushel of the peas and a half a bushel of the sorghum seed per acre, the mixture makes fine hay, and when sown in drills with a coarser sorghum like Orange, makes excellent silage.

Saving the hay in good condition is usually a difficult matter in unfavorable weather, and for that reason the planting should be done at such a time that the crop will mature during the dry weather which usually prevails during September and October. For making the best hay the vines should be cut as soon as the earliest pods become yellow, though the work may be delayed a few days if rain should threaten. When cut at that stage the vines cure much more easily and rapidly than when cut earlier, when the total yield is at its heaviest, and though the hay may be not quite so tender, it will be eaten readily and will have a higher nutritive value.

A common method in saving the hay is to start the mower as soon as the dew is off in the morning and run it until noon. As soon as the upper surface of the cut vines is well wilted a tedder is run over the field to turn the vines over and expose them more thoroughly to the sun and air. If the crop is very heavy this may have to be done twice. When a tedder is not available the work

can be done with a pitchfork, but this is slower and more expensive. Vines which have been cut in the morning and turned in the afternoon will usually be dry enough to put into small cocks the following afternoon, and if the weather promises to be favorable they should be left in these cocks two or three days before they are hauled to the barn. If it should rain before the vines are put in cocks, they should not be touched until the surface is well dried and then turned as though freshly cut. If the hay is banded promptly and properly, a light rain does very little harm, even after curing has begun, and a heavy rain may fall on freshly cut vines and do little or no damage. The vines should be banded as little as possible or many of the leaves will drop and be lost. When the weather is fair and settled the freshly cut vines are sometimes rolled into bundles as large as can be banded easily with a pitchfork and allowed to lie in the field until thoroughly dry. This method saves labor and prevents any loss of leaves, but the tangled bundles are hard to dry if they should be wet with rain. When peas are grown with corn and are wanted for hay it is best to cut the stalks and vines together and make into windrows the same day. The cornstalks prevent the vines from packing closely, so that they dry more quickly. Such hay can often be put in the barn safely two days after it is cut. Cowpea hay is often cured by stacking the wilted vines around poles four to six feet high with two or three cross pieces nailed on each. A still better device consists of four poles six feet long joined at the top and held four feet apart at the bottom by means of crosspieces on which the vines are piled so as to cover the pyramid. The object of both devices is to permit the air to circulate more freely among the vines and so dry them with very little banding and loss of leaves.

When fed on well-cured cowpea hay containing a fair

amount of matured pods, horses and mules will keep in good condition through the winter with no grain feed.

The selection of the variety for planting should be determined by the use to be made of the crop. If a heavy yield of hay is the principal object, a vigorous upright variety like the Whippoorwill or the Groit is the best. If the crop is to be pastured or left to decay on the ground through the winter, any of the trailing sorts sold as Black, Red Ripper, and Unknown are good. The Blacks are especially esteemed for this purpose as the seeds do not decay easily. Where land is infested with wilt or with root knot, only varieties resistant to these diseases, like the Iron and the Brabham should be used. No plant grown in Florida surpasses this in value for hay and it makes good pasture too.

SOY BEANS.

Although the soy bean has been grown in this country occasionally for a long time, it is only within the last ten years that it has attracted general attention as a forage crop. It has been found to grow well in all the cotton region, as well as farther North. It is strongly drought resistant and makes a hay similar in quality to that from cowpeas, though usually with a larger proportion of seeds and somewhat more woody stems. There are many varieties which differ greatly in time of growth, some ripening within ninety days from sowing the seeds, while others require the whole season. The Mammoth, a late variety, is now commonly grown in the South. The Ito San is a good early variety and is quite commonly grown. A number of recently introduced varieties are becoming popular, among them the Haberlandt, Acme and Tokyo.

The land should be prepared as for cowpeas and the seed planted in drills at a sufficient distance to permit one or two cultivations. One bushel of seed will plant two to three acres, the amount depending on the distance be-

tween the rows. The planting should be shallow, never more than two inches, or many of the seeds will decay. Inoculation with soil from an old soy-bean field is desirable but not usually necessary in the South. Rabbits are exceedingly fond of the young plants and sometimes cause serious injury to the crop when the field is near woods. If wanted for hay the crop should be cut when the upper leaves begin to turn yellow, but if wanted for seed the gathering should be delayed until nearly all the leaves have fallen. The hay is easily cured and is fully as nutritious as that from cowpeas. The yield of seed varies from ten to thirty bushels per acre. It is not a desirable crop to plant with corn, as it matures too late.

As the seeds of many varieties shatter badly, the gathering for seed should not be delayed longer than is necessary for their ripening, and many more seeds will be saved if the cutting is done early in the morning while the pods are still damp with dew.

The following tables from Henry's "Feeds and Feeding" shows the feeding and fertilizing value of soy beans.

DIGESTIBLE NUTRIENTS IN 100 POUNDS.

	Crude Protein. Pounds.	Carbohy- drates. Pounds.	Fat. Pounds.
Wheat bran	12.50	41.6	3.0
Alfalfa hay	10.60	39.0	0.9
Soy bean (grain).....	30.70	22.8	14.4
Soy bean (hay).....	11.70	39.2	1.2
Red clover	7.60	39.3	1.8
Timothy hay	3.00	42.8	1.2
Corn stover	2.10	42.4	0.7
Linseed meal	30.20	32.6	6.7

The above is conclusive evidence of the great value of soy beans as a feeding stuff, and the following from the same authority shows how they stand as a fertilizer:

FERTILIZER CONSTITUENTS IN 1000 POUNDS.

	Nitrogen. Pounds.	Phos. acid. Pounds.	Potash. Pounds.
Wheat bran	25.6	29.5	16.2
Alfalfa hay	23.8	5.4	22.3
Soy bean (grain).....	58.4	13.7	24.7
Soy bean (hay).....	25.6	6.8	23.3
Red clover	20.5	3.9	16.3
Timothy hay	9.9	3.1	13.6
Linseed meal	54.2	17.0	12.7

VELVET BEANS.

The velvet bean is the most rank-grown annual legume cultivated for forage and is one of the best plants for the production of feed and as a restorative crop in the rotation. It is not as good as the cowpea for making hay, as its growth is so strong and the vines are so long and tangled that it is difficult to cut and cure, though when cut early and well cured the hay is of excellent quality. It makes an immense amount of fall and winter grazing, produces seed abundantly, and leaves the soil in a fine condition for any following crop. It needs a long season for maturing, from four to eight months, depending on variety. It is most commonly grown on sandy lands east of the Mississippi River and especially in Florida. It is one of the best plants for growing on newly cleared lands, as its growth is so dense that it smothers all grasses, sprouts and weeds, and "civilizes" new soil better than any other crop.

To secure the best results, the vines must be given some support to keep them up from the ground, or they will not fruit well or make so vigorous a growth. Poles may be used for this purpose, but they are troublesome and expensive, while growing corn serves the purpose well and is much cheaper. Some strong growing variety of corn is planted about a month before the beans, and the

stalks give the vines the needed support. Pearl millet is also used for the same purpose and gives a better support than corn, but is less valuable for grain. Some planters top the corn as soon as the ears are fairly mature, asserting that the part of the stalk which is left is not pulled over by the vines as easily as is the taller whole stalks. Others plant three rows of corn and one of beans, maintaining that by that method they get a good crop of both corn and beans. Still others plant the corn in six foot rows and when it is about a foot high plant beans in the middles. Planted in this way the corn makes a fair crop and the vines have abundant support, though the late planting makes only a light yield of seed. The heaviest yield of both vines and seeds is undoubtedly secured when the beans are planted in the row at the same time as the corn, but with such treatment the yield of corn is usually small and difficult to gather.

When grown alone velvet beans should be planted at about the same time and in the same manner as corn, using eight to twelve quarts of seed per acre. With a good support for the vines the yield of seed is very heavy, from 30 to 50 bushels per acre. The seed is gathered by hand. It costs from 15 to 20 cents to gather a barrel of pods, which will shell about a bushel of beans. Thrashing is somewhat difficult, as the pods are very hard and tough, but at present prices the seed is a profitable crop. When a crop of seed has been gathered the vines and immature seed left make rich grazing, and the fertilizing value of the crop is little reduced.

Grazing usually begins at about the time of the first frost and may be continued through the winter, as both vines and beans remain in an eatable condition. The beans are quite hard when mature and dry, but are eaten readily in the fall and again when they become slightly softened in late winter, so that all are consumed before the ground is plowed in the spring. Dairymen find that it gives the greatest stimulus to milk production when

grazed in the fall, while beef growers value it more highly for winter grazing. Hogs usually find plenty of good feed left by the cattle. It is undoubtedly the most productive annual legume.

FLORIDA BEGGARWEED.

This is an important forage plant, being most common as a volunteer growth in old fields having a light sandy soil. It is an annual which makes its growth late in the season at the same time that crabgrass is growing most rapidly, the two being usually found together. It is erect in growth, reaching a height of five to seven feet on good soils and is used for hay, silage and grazing. When cut at the right time and properly cured it makes superior hay, but it must be handled carefully. If allowed to become too old before it is cut many of the lower leaves are lost and the stems become woody. After cutting it should be windrowed as soon as wilted to prevent the leaves from dropping. To make good hay it should be cut when not more than three or four feet high, usually in July, and a second cutting can then be made a few weeks later. Although not sufficiently bulky for use in filling a silo, a little of it mixed with other material adds greatly to the value of the silage, as it gives a marked "June" flavor to butter even when used in midwinter. Its greatest value, however, is as a grazing plant in late summer and early winter, as it is even more fattening than alfalfa or cowpeas.

It usually makes a scattering and uneven growth on land which has not been plowed during the year, though when occasionally strips are left standing at the second cutting and the field is then harrowed crosswise to scatter the seeds a good crop is secured the second season after plowing. The better practice is to reseed the ground after oats, melons or some other early crop has been removed, using twenty to thirty pounds of the rough seed per acre. The seed is usually saved by stripping it

from the plants by hand, the labor making it cost about 3 cents per pound. Clean hulled seed is now handled by seedmen.

In the region where it is grown most commonly it is seldom seen as a volunteer crop on newly cleared lands, but is more or less abundant, growing with crabgrass and Mexican clover in nearly all old fields, especially in corn and cotton, where it springs up after the crops are laid by and furnishes a large amount of good grazing after the crops have been gathered. Some cotton growers object to it in their fields, as the immature seeds are somewhat rough and the stalks when switched about by the wind often pull seed cotton from the bolls.

It is easily killed by a single cultivation in late summer and soon disappears from fields which are not plowed. While it is a crop of secondary importance and seldom used alone, it is a welcome addition to any hay crop, and when so abundant as to afford good grazing it will fatten horses, mules and cattle more rapidly than most other plants.

PEANUTS.

Peanuts are often profitable, both for hay and for grazing, the Spanish variety being best suited to these purposes. The crop does best on light sandy soil, which must contain a good supply of lime or many of the pods will fail to fill. Any sandy soil may be made to produce good yields by the application of fifty bushels of ground limestone per acre, broadcast, just before the ground is plowed. The planting requires about two bushels of seed per acre, and in the northern part of the State these should be carefully shelled before planting, though that is not necessary in the southern section. The crop requires no special cultivation except to keep it free from weeds and to keep the surface so mellow that the shoots can hurry themselves easily. If the crop is to be used for hay, it should be gathered just before the first frost.

When vines of the Spanish variety are pulled nearly all of the nuts will adhere to the stems and after drying will make a hay even richer in protein than that from cowpeas or soy beans. Hogs eat both the vines and the nuts, and the crop should not be grazed before the nuts begin to mature. Hogs pastured on peanuts are often planted with corn, after the manner of planting cowpeas and soy beans.

CASSAVA.

Cassava is grown to a considerable extent in central and southern Florida. It does best on light sandy soils, on which it yields five to ten tons of roots per acre. The roots are similar in appearance to those of sweet potatoes, but are much larger and make an excellent feed for cattle and hogs. Cassava is propagated by sections of the old stems, which are cut into pieces four to six inches long and planted about four feet apart each way, the after cultivation being the same as that given to corn. Cassava should be planted about the same time as cotton, the crop maturing from October to November. The roots will remain in the ground all winter in good condition, but as they decay in a few days after exposure to the air they should not be dug until wanted. The stems which are used for planting are killed by moderate frosts and are somewhat difficult to preserve in good condition through the winter, except in the extreme South. The best method of preserving them where heavy frosts occur is to cut them when well matured and bury them in a dry place where they will not become frozen.

MILLETS.

The millets which are most valuable are those which belong to the foxtail group. Of these there are several varieties, the principal being the Common, the Hungarian, the German and the Pearl, which differ mainly in size and period of growth. Common millet was one of the

first varieties to be cultivated in the United States and is one of the most hardy sorts, bearing severe drought with little injury and making a heavier yield than the others when grown on poor soils. The hay is also of finer quality, though when grown on rich soil it does not yield as heavily as the German. Hungarian millet does not bear drought as well as Common millet, but under favorable conditions of soil and moisture it gives a somewhat better yield. German millet makes a much heavier yield than either of the others when grown on a rich, moist soil, but is not as well adapted to dry uplands. The hay is coarser than that of the others and should never be allowed to become overripe.

All of these millets make their best growth during warm weather, and so are used largely as catch crops, to be sown in May or June on land from which oats or some other early crop has been gathered or on land which is wanted for planting in September or October. They are shallow-rooting plants, and therefore the upper two or three inches of soil should be made as fine and mellow as possible before seeding. When a previous crop has just been removed a thorough disking is usually all that is needed, after which the ground should be harrowed smooth and the seed sown at the rate of two to three pecks per acre and covered by rolling or by light harrowing. Rich, heavy soils require less seed than those which are thin and light. It is important that all of the varieties be cut early, as when overripe the hay is harsh and woody, is not easily digested, and often has a decided laxative effect when fed to horses or mules. A common practice is to cut as soon as the grass is well headed, which will be in forty to fifty days from sowing for the Hungarian, fifty to sixty days for the Common, and sixty to seventy days for the German. If the weather or other conditions are such that it cannot be cut until the seed is well developed, it will usually be better to let it stand a week or ten days longer and then save it for seed, which

as a rule brings a good price. All of the millets are excellent soiling plants as well as forage pants.

AS TO BREEDS OF STOCK.

The time for promiscuous inbreeding of live stock on the rangee has passed. It must cease if we would have the success in this industry that our natural resources and advantages make possible. We must grow a better grade of live stock of all kinds.

This can be easily done by grading up with the best native cows and thoroughbred bulls of the improved breeds that have by experiment been proven to be adapted to our climate and conditions. There are a number of such breeds, such as the Hereford, Short Horn or Durham, Aberdeen-Angus, Red Polled and Devon, all of which are of the highest type of beef animals. In this respect no other breeds of cattle are superior. The same rule is true of all other live stock, as to grading up, and applies with special force to hogs and sheep.

From the breeding standpoint the important steps are (1) the use of tried pure bred sires, (2) proper feeding of breeding animals, (3) careful culling of barren and poor-breeding females, and (4) replacing culls with the best females in each season's product.

As it costs little or no more to produce an 8-cent animal than it does to produce a 5-cent animal, the profits to be derived from producing live stock is limited by the quality of the animals. Good sires must be obtained and the herd must be carefully culled. Remember that the sire is at least half the herd.

THE Purebred Sire Means The Scrub Sire Means

- | | |
|------------------------------|------------------------------|
| 1. Uniformity. | 1. Lack of uniformity. |
| 2. Individual superiority. | 2. Mongrels and misfits. |
| 3. Early maturity. | 3. Late maturity. |
| 4. More marketable stock. | 4. Poor market demand. |
| 5. More money for your feed. | 5. Less money for your feed. |
| 6. Credit to the owner. | 6. Discredit to the owner. |
| 7. Bigger profits. | 7. Loss and dissatisfaction. |

In grading up or rather building up live stock in this way, two essential and valuable features are obtained and transmitted through the offspring; they are: The vigor and hardiness obtained through the acclimated native female and the size and hardiness obtained through the acclimated native female and the size and added vigor and vitality on the part of the male. Unquestionably the grading up of all live stock is the best, the cheapest and the surest, as well as the quickest method of creating and improving either a herd or a flock.

Taking the State as a whole, we can safely say that there is no other area of like proportions in the eastern portion of the United States that presents such an attractive opportunity, and possibility for live stock growing as Florida. The climate conditions throughout the year are unexcelled. Shelter, except occasionally, is rarely necessary, and even then for very short periods, and the time when feeding is necessary seldom goes beyond three months.

Principal among other reasons why live stock should be grown in this State, aside from the fact it can be successfully grown, and that it is one of the most profitable industries is, that it is also the best aid in building up and maintaining the fertility of farm lands.

It is the first and most important step in solving the great problem of soil conservation.

It brings about diversification in farm practice and



makes successful crop production, both possible and certain, and until these things are accomplished, farming is but a poor experiment. And it also relieves the farmer of the necessity for store credits and the cure of the crop mortgage system with its blighting influences, and almost inevitable ruin as a result.

There is no part of this State in which success to a greater or less degree in live stock growing cannot be attained. But the extent of that success will depend upon the man, for the soil will do its part, if given the opportunity. The climate and the seasons will perform their part in the plan of nature, working harmoniously in the production of the grasses, in growing the forage and grain for feeding purposes and in keeping up the water supply. We do not advise going into live stock raising in this country hut by degrees. The average man should start with the right kind of stock in a moderate way, and build up. We believe it is possible to get well started in the industry within three years. If a new man in the business he will by that time become equipped with the knowledge and experience that will enable him to branch out on a large scale. If he is a grower of experience he may increase his herd and flocks more rapidly. But in all of this, and in either case he should adopt the improved methods—rotating crops, feeding, pasturing, and general management of the stock, for his knowledge and experience will then become as great a factor as his soils and its products and also in the productive capacity of his farm; in fact, he will then become the dominant factor, and his success will be limited only by his desires and the attention he bestows on his business.

IMPROVED FARMS.

Should persons desiring to take up live stock farming wish improved land, it can be had either in small, medium or large tracts, as there are ~~the~~ improved lands to be had in every county. In many counties there are large

farms or small that will make ideal dairy farms and which can be located close to local markets or railway transportations. The dairy industry is a very profitable one in most of the counties, but the supply of these products is not "a drop in the bucket" so to speak when it comes to supplying any one of the near by big city markets. The demand always far exceeds the supply.

OTHER REASONS FOR GROWING LIVE STOCK..

There are many other reasons why the people of Florida should grow live stock, besides those already mentioned. It is an industry especially adapted to this State, the physical conformation of which is a most favorable feature, its innumerable streams of fresh water that flow across it form its northern boundary to the Gulf of Mexico, and from east to west across the peninsula, together with its numerous lakes, is an asset equal in importance to the productivity of the soils. A climate and seasons which enable it to produce bountiful grazing the entire year, with but small and rare necessity for shelter. Its immense areas of cutover lands are yet cheap by comparison and can be purchased at reasonable prices, improved or unimproved, in tracts from one acre to thousands.

AN ATTRACTIVE INDUSTRY.

To those who would better their prospects in life, live stock growing should be an attractive industry. There should be a fascination about it for young men particularly. It offers to them a life in the open, where they can live amid the glories of nature and breathe the pure air of Heaven and enjoy health, instead of existing between office walls, or in dingy stores with little or no hope for future betterment of their condition. Besides it is possibly the oldest avocation of man, for from earliest times, even when the first records of human history were but mere fragments, handed down through tradition or legend from generation to generation, man has

owned flocks and herds of live stock. If there are doubters, let them go back to the most ancient history they can find and read it.

In ancient times live stock growing was considered a profession of great dignity. Cattle were the earliest domesticated animals. They are mentioned in the oldest written records of the Hebrew and Hindoo peoples, and are figured on Egyptian monuments that were erected 3,000 years B. C. They are also referred to in the Neolithic age of man, and all recognize it as one of the signs of the Zodiac. Let them read the history of the Byzantine Empire, of Babylon, of Greece, of Rome and Carthage, and India and China, and then come down to the days of Abraham, Isaac and Jacob. Certainly this is good company. From these times to the present day the growing of live stock has been perhaps the most profitable branch of agriculture. It is in this branch of agriculture that the State of Florida offers to every capable man advantages unequaled in any other section of country in the Eastern United States.

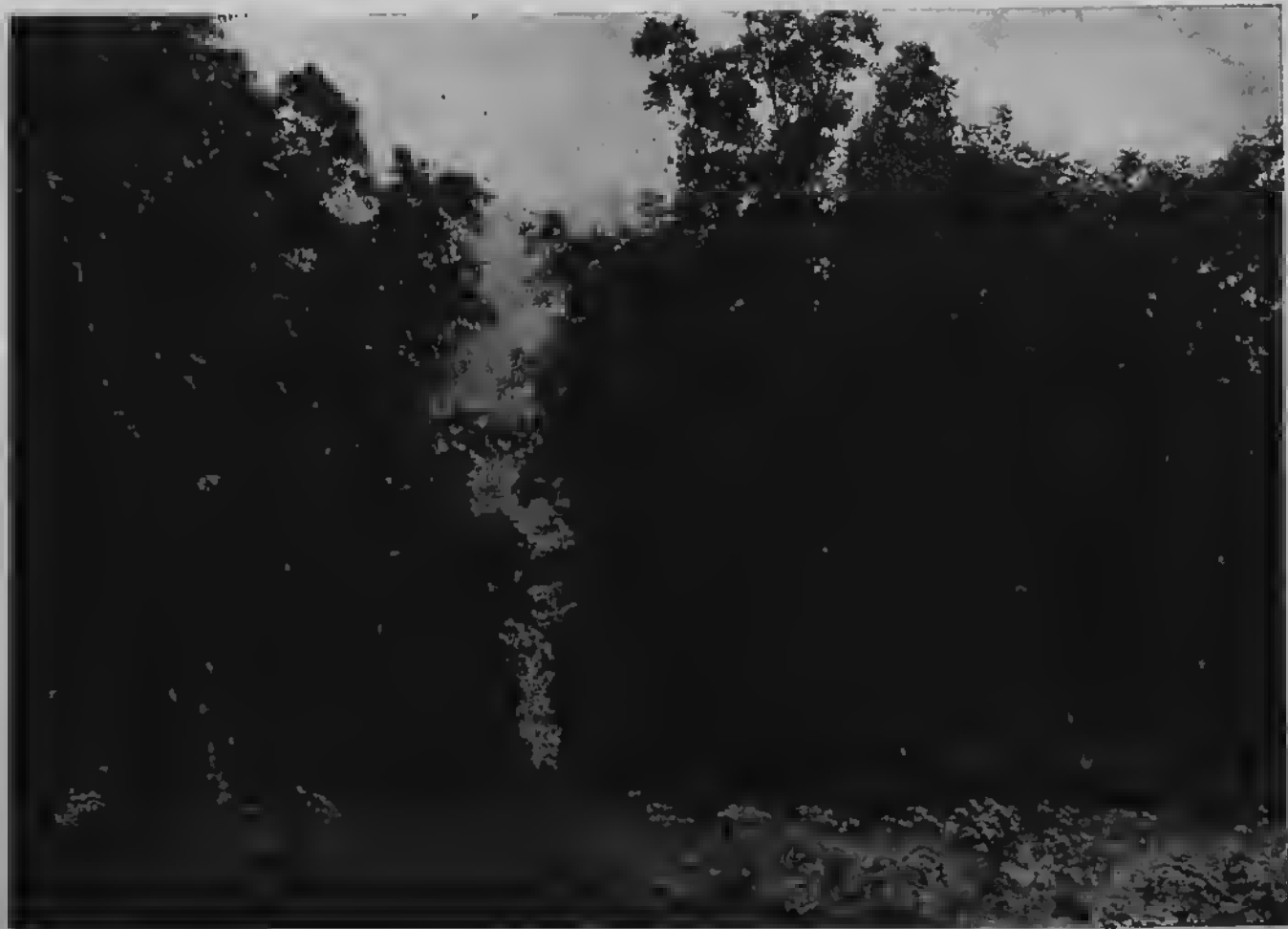
















8-A-2.



SHEEP FOR THE FARM AND RANGE IN FLORIDA

By H. S. Elliott,
Chief Clerk, Department of Agriculture.

From the earliest historical period the sheep has been the companion of the Indo-Chaldaic man. It finds mention in the oldest Saascrit, Chaldaic and Egyptian records. Historians and poets speak of the timidity, harmlessness and usefulness of the sheep and of their products. Astronomers placed Aries at the head of the constellations, and reckon latitude and longitude from the Ram. Eliminate all allusions to sheep from the Bible, and much of its poetic beauty will be gone.

ORIGIN OF SHEEP.

So long has the sheep been under the control of man that the spot where the race started is lost to the antiquarian. Before the days of Abraham, shepherds from the valley of the Euphrates had made a descent upon Egypt and established a dynasty that lasted 500 years, until the Egyptians drove them and their flocks from the land; and we read that when Jacob and his sons went there with their flocks they were compelled to settle in Goshen, because their occupation as shepherds was "an abomination to the Egyptians." We are thus able to trace the sheep to the worn plains and mountains of Persia, Arabia, Turkey and Greece, later to both shores of the Mediterranean, and finally to Northern Europe and America.

The fine wool of the eastern sheep furnished the staple for the purple and scarlet clothing of kings and princes, and to those sheep, through Greece and Rome, may be traced the sheep of Spain. When the Tartar tribes from

the mountains of Asia ravaged western Asia and the Slavo-Germanic barbarians burned, destroyed and killed the Greeks and Latins, the shepherds fell and their sheep supplied food to warriors; only the Moors of Western Spain could stop their inroads, and there the fine woolled sheep were spared, near the sea, and from thence received their name, *marino*.

Thus we have traced the variety of sheep from before the days of the Hebrew patriarchs, to the present; living in a climate where grows the vine, fig and orange, we conclude there is nothing in such climate injurious to their health of body, or fineness of fleece.

FLORIDA WILL YIELD THE GRASS.

Sheep are both grazers and browsers and live upon grass and the leaves of certain herbs and bushes. No State can grow a greater amount of nutritious plants, suitable for the food of sheep, than Florida.

In no portion of the State do snows cover the vegetation, nor are frosts sufficiently severe to freeze the soil or kill many varieties of the most nutritious grasses. Most of these grow constantly, even best when in other States the pastures are frost bound. Rains sufficient for good vegetable growths fall at all seasons and places, and in one-half of the State vegetation is perpetual. Perennial and annual grasses and nutritious herbs grow everywhere except in the densest shades and in deep waters.

The lands at present adapted to sheep pastures will supply more food to the acreage than will the best natural pasture of any State or Territory west of the Mississippi, though they are considered the greatest cattle ranges of America. Unlike them, the water is good and abundant at all seasons and locations. Such, in brief, is Florida in its natural state.

Among the varieties of range lands adapted to the growing of sheep, five classes may be considered:

First. Are the dry lands covered with pines, and black and willow-leaved oak as undergrowth, free from palmettoes or water plants. These lands are fairly stocked with perennial wire grasses and a few annnals. These have been burned over as often as every second year. This land could be cheaply converted into the best of sheep-walks by clearing it of all dead wood, roots, scrubby bushes, and removing the pine leaves if they covered the surface, and give it a good harrowing to enconrage the growth of the seeds of both perennial and annual grasses. The smut-grass delights in this soil, and can be easily enduced to grow on it. This grass is one of the most nrititions of grasses, and remains green and grows during the coldest months in the most northern counties. The Bermuda, another perennial grass, spreading by runners and very nutritious, grows well. To these will be added as volunteers, on account of the annual harrowing, the crabgrasses, and, with a little pains, the Japan clover. The pine trees need not be removed.

Second. The wetter flat woods pine lands produce some dwarf palmettoes, a few gall and other bnshes, wire-grass, lyme grass, wild onts and others. The soil contains considerable vegetable matter, and clearing and harrowing greatly increase the growth of the native grasses. These grasses will increase rapidly, and green and nutritious with the smut, and Bermuda may be added and form a compact and evergreen turf on which sheep will feed. In all the southern portions of the State the Para grass will thrive on this soil when properly prepared. Sheep on these soils should be penned at night on the dry, high land.

Third. The same scrubs are nsually covered by the scrub pines of no value, a schnubby growth of oaks and other bnshes, with clumps of scrub palmettoes. The soil is white and sandy, nearly destitute of vegetable matter,

and little grass is found on them. If these were cleared of the brush, etc., and planted to leguminous crops, covered with oak leaves and grass and made into sheep pens, they would become productive as gardens. Good water may generally be found near these scrubs.

Fourth. The low flat prairie lands, frequently covered with water, can be made to produce more grass than any other, are at times too wet for sheep. The lyme and other coarse grasses grow on these lands in large quantities, affording feed for cattle as well as for sheep. When drained of the surface water, as they can be easily, these lands would produce heavy crops of Bermuda, smut, and carpet grasses, and many others of high value for sheep.

Fifth. The hammocks remain to be considered; these lands are fairly dry and densely covered with broad-leaved trees, such as oaks, hickories, etc. In their native condition these produce very little grass. The cost of clearing is too great for profitable pasturage. Moreover, these are the lands usually selected for cropping in cotton and corn and may be omitted in estimates for pasture lands.

FLORIDA SHEEP ARE HEALTHY.

As early as 1830 Scotch settlements were made in West Florida and sheep were brought with them. These have been fed on the dry pine lands, almost without care, and from them have sprung all the sheep now here. The warmth of the climate permits the lambs to be dropped at any season of the year; therefore the rams need not be separated from the ewes; and seldom does twelve months pass from birth to birth, more often only nine months. Loss from cold storms is at the lowest percentage; and the ewes rear more lambs each year than their own number, unless prevented by dogs.

A renewal of interest in the raising of live stock gen-

erally also suggests the growing possibilities of profitable sheep raising. The present price of wool being directly responsible for a sudden and apparently earnest interest in a revival of the sheep growing industry.

Instability in wool values explain in large part the increases and decreases in numbers of farm sheep during the past 30 to 50 years, so that at present many former raisers of commercial sheep who breed altogether for wool are giving more attention to mutton, and most of the new flocks being established are of some of the mutton breeds. A system of sheep farming that is to be continuously successful cannot ignore either wool or mutton. In many cases the two products will be worthy of equal consideration; in others, either one may be emphasized according to the peculiarities of local conditions, management and marketing. All purpose breeds are apparently what is needed.

A decision to raise sheep chiefly for mutton purposes leaves much still to be considered in making a choice of type and breed. The choice of a breed is not the most important question. Any breed is far superior to no breed. Once established, there must be advance in the character and usually in the size of the flock. Such advance can not be made unless the same breed and type is adhered to in securing rams. The female of mixed breeding, no matter how good individually, is an uncertain quantity when used as a breeder. There are enough highly improved breeds to allow a choice of one that will have special fitness for almost any combination of real needs. In this article it is aimed to discuss the breeds in a way that will enable those who are not familiar with them to know which ones are likely to meet the requirements. All the breeds mentioned in this article have their good qualities and advantages.

Some of the breeds differ very strikingly in appearance. Differences in size, color and covering of face and legs,

while quickly noticed, are not the main points which determine whether a breed is likely to prove satisfactory upon rough pasture land, for winter lambing, or any of the points that must be taken into account when starting into sheep raising. The breeds differ very widely in their special points of usefulness for various sections and systems of management. The differences are mainly a result of breeding for special qualities needed by the farmers in the localities in which and for which the breeds are formed.

In starting into sheep-raising the most important thing is to decide what plan can be best followed. The available feed and care and the selling outlets will determine this. If pasturage is sparse, feed expensive, and marketing arrangements poor, wool will need to be the first consideration. If there is a good market for winter lambs and the feed and care that can be given are such as are needed, then the ability of the ewes to get in lamb in the spring and the mutton qualities are the important things to look for in the breeding stock. If it is desired to have lambs come early and to feed them to be sold before the time stomach worms become troublesome, the choice would not fall upon the same breed that would fit in if there was a better chance to keep the lambs to clean pastures, and they were expected to take care of themselves more largely through their first summer.

By keeping a moderate size flock of sheep the farmer can provide with meat for the table, sell a few lambs for mutton, and secure additional revenues through the sale of wool. For those who have no sheep, let us consider just how to get started in the business with a small outlay of capital and how to handle the flock after obtaining it.

Your first ewes can be native ewes, purchased from nearby sheep owners. Go into a flock and pick out vigorous ewes with compact bodies. Get young, healthy

ewes. If you must buy old ones, do not take those having spread, broken or worn off teeth. Such ewes cannot eat well and will make no money as breeders for their purchasers.

Do not use anything but good rams of a mutton breed upon your ewes. A Southdown, Shropshire, Hampshire, Dorset Horn or Cotswold ram will prove most desirable. He should be about two years of age, healthy and carry a plenty of mutton. Such a ram will cost, delivered, from \$15 to \$25, and can be bought by a half dozen farmers clubbed together. He will breed from forty to sixty ewes.

Sheep do not require closed buildings for protection from cold, as their fleece affords protection if kept dry. A low shed, built on dry ground and opening to the south, is sufficient. Such a shed need cost but very little, as scraps of lumber about the farm can be utilized in building it.

Place your flocks within a dog-proof fenced inclosure at night, as dogs often attack and destroy sheep. A fence that will turn a dog must be at least fifty inches high, have a barbed wire stretched flat to the surface of the ground at its bottom, and three barbed wires seven inches apart stretched at its top. The space between the barbed wires can be filled in with old boards, poles, or any other fence-building material, provided it is so built as to keep the dog from crawling through.

Ticks and lice may infect sheep. Guard against this by dipping once each year in dips sold for this purpose. A rain barrel or tub can be used to hold the dip. Pick the sheep up bodily and work it around gradually in the dip until all parts are submerged and drenched to the skin. Keep salt before the flock at all times. Sheep require a great deal of salt, and it is essential for them.

Give the sheep access to all harvested and vacated fields, but do not depend entirely upon such forages

The ideal way is to provide lots of forages of such size as will pasture the flocks for only two-week periods during warm weather. By changing the pasturing ground of lambs every two weeks there is little danger of loss from stomach worms, as clean pastures do not infect sheep. Rape, cow-peas, oats, vetch, crimson clover, velvet beans and soy beans should constitute the principal forages used. During the fall and winter permanent pastures can be used. Even regular fields of winter wheat and barley can be pastured without injury to them.

When pasture is not available, feed hay or fodder to the flock. The sheep should receive as much cow pea hay or velvet beans as they will eat; also feed silage. Keep up the appetites of the ewes by adding small quantities of rape, collards, chopped cabbage, or roots along with their hay. Do not feed sugar beets and mangel-wurzels to your rams or weathers.

Begin feeding the ewes a little grain, about two weeks before lambing, and gradually increase the amount to one-half pound daily at that time. After lambing, slowly increase the amount to one and a half or two pounds daily, and continue this ration during the suckling period. Ewes need not be fed grain when dry if good pasture is provided.

Give the ram just enough grain to keep him in good condition. The amount fed should be increased during the breeding season.

Teach the lambs to eat grain as soon as possible after birth, and continually feed them what they will eat up clean, until ready for the market. Feed them twice daily, keeping them separated from the ewes.

The following grain ration, generally available on the farm, is suitable for sheep: Corn, three parts by weight; cotton seed meal, one part by weight.

AMOUNT OF FEED PER 100 POUNDS OF LIVE WEIGHT, FOR FATTENING SHEEP.

Ration No. 1.

- 2 pounds corn.
- $\frac{1}{2}$ pounds cottonseed meal.
- $1\frac{1}{2}$ pounds prairie hay.

Ration No. 2.

- 1 pound black strap molasses.
- $\frac{1}{2}$ pound cottonseed meal.
- 3 pounds cottonseed hulls.

FOR GROWING SHEEP.

Suggested Ration.

- $\frac{1}{2}$ pound corn.
- $\frac{1}{2}$ pound cottonseed meal.
- $\frac{1}{2}$ pound wheat bran.
- 2 pounds prairie hay.
- 2 pounds silage or roots.

Growing sheep to be kept in condition should have about two pounds of silage or roots, or similar food, in their ration.

If cottonseed hulls and meal cannot be bought in the local markets any cottonseed oil mill or broker can supply these products. The meal is generally marketed in sacks of 100 pounds. The usual carload consists of 300 to 400 of these sacks. The hulls can be bought in 100-pound bales or sacks, or can be bought cheaper loose in bulk. A carload varies from twelve to twenty tons. If desired, these products may be shipped in the same car by putting the sacked meal on top of the loose hulls.

Probably August and September are the best months for mating, as this will bring your lambs in January and February. Do not leave the ram with the ewes continually, but take the ewes to him for a few minutes each morning. Allow only one service to a ewe during each

period of heat, but be certain that the ewe gets in lamb before dropping breeding operation.

Watch the ewes carefully during the lambing season, but do not interfere with them unless necessary. After lambs are born, see that they are properly dried and suckled. Frequently ewes disown their lambs unless forced to nurse them.

Give the ewe little if any grain ration for two or three days after lambing. At the expiration of this time it can be gradually given her until the full ration is reached.

In small flocks the fleece can be most economically removed by using band shears. After the sheep is shorn remove all tags and burs from the fleece, carefully roll it up inside out and tie neatly with cotton or paper string. If only a few fleeces are had they can be placed in clean gunny sacks and sold to local dealers. If there is a woolen mill in your vicinity perhaps it will make your wool into cloth for you.

AS TO BREEDS.

The following breeds of sheep, as elsewhere stated, are generally considered to be the best adapted to Florida conditions. They are the breeds that have been used successfully in all parts of this State for many years and have proven to be the best.

The descriptions following are for the purpose of showing the principal characteristics of each breed, so that parties interested can make an intelligent choice of the breed best adapted to their special locality and needs.

The climate of Florida is quite as good for sheep production as the plains of Persia, Asia Minor and mesopotamia or Anstralia. The greatest drawback is the dog, and it is inconceivable that the people of a progressive State will longer submit to the present conditions.

THE SOUTHDOWN.

The Southdown is probably the oldest breed of sheep

in existence. They have been commented upon for centuries by prominent agricultural writers, and there is a distinct record more than two hundred years old that refers to this breed and cites an incident where several flocks were entirely destroyed by a disease resembling smallpox.

The breed originated in the low range of hills in southeastern England, known as the South Downs, which extends through the counties of Kent, Sussex, Hampshire and Dorsetshire.

They progenitors of the Southdowns were known as the Sussex sheep, and they were small, ill-shaped, horned sheep, having dark faces and lacking quality. Their fleeces were light but of good quality, and they had exceptional development of the leg of mutton.

The modern development of the Southdown has undoubtedly been effected entirely through selection. It is said that attempts were made to introduce new blood, but these have been unsuccessful. Almost a century and a half of careful selection has improved the carcass, especially in development of the fore quarters, neck and rump. Greater refinement has been attained and the horns have been eliminated.

The distribution of the Southdown is practically universal. They can be found in many parts of England outside of their native shires, and exportations have been made to almost every civilized country. The Southdown has been widely used in the development of the other medium-wool breeds of sheep, and there are very few, if any, of these that do not owe, either directly or indirectly, some part of their improvement to Southdown blood.

The first reliable record we have of Southdowns in this country is that of Dr. Rose's flock, in Seneca County, N. Y. In 1803 these sheep were reported as doing well. In all probability importations were made many years previous, and they have taken place almost continuously since that date.

The Southdown is the mutton sheep par excellence. There is no better combination of quality and beauty in the bovine world; hence their name, the "gentleman's sheep." This breed is remarkable in having a large number of wealthy admirers and breeders whose flocks have been of more than ordinary excellence, though even now, as a rule, the best specimens are imported from their native hills. The lawns of quite a number of famous country estates are kept closely cropped by these bovine aristocrats and they are also used upon the parks in some of the large cities.

They have attained their greatest popularity in the South. In the spring-lamb region of Tennessee, Kentucky and Virginia, Southdown rams are used almost exclusively. This country has few other sections where one breed has been adopted for a standard over so wide a range of territory. Other breeds have been tried here and in some cases have produced larger lambs, but they lacked quality and condition and have not succeeded in supplanting the Southdown to any appreciable extent. The lambs of the latter attain a weight of 60 to 90 pounds when from three to four months old, and are ready for market the latter part of May, during June and early July. Gains of from one pound to one and one-fourth pounds per day per lamb are reported for short periods during the best growing seasons. The early lamb is the object sought after.

The Southdown is the smallest of the mutton breeds. They are, however, remarkably compact; their deceptive weights causing them to be called "the big little sheep." Mature rams in breeding condition should weigh from 170 to 190 pounds and ewes from 125 to 130 pounds.

The wool of the Southdown is of good quality, but the fleeces are not as heavy as might be desired. The ewes' fleeces should weigh from six to eight pounds and the rams from ten to twelve pounds. The government flock at the Morgan Horse Farm, Middlebury, Vt., has aver-

aged approximately seven pounds in weight of fleeces during recent years, one of the breeding rams producing more than twelve pounds of wool. This wool graded very largely three-eighths and one-half blood combing, but in many flocks in this country clothing wool would predominate because of the shortness of fiber.

The breed is noted for its early maturity and its easy keeping qualities. Southdowns thrive upon pasture that would be entirely insufficient for the larger breeds. They are undeniable a short pasture sheep. In fecundity they are fair, but not equal to the best.

THE SHROPSHIRE.

Although little more than half a century old, the Shropshire is today the most popular breed of medium-wool sheep. They attracted little attention prior to 1848, when they first received the name they now bear.

The profitable combination of wool and mutton the Shropshire represents has caused it to be known as the "farmers sheep," and it has been especially popular in the farming section of America. However, this breed has not only found a home under these conditions, but it has been used extensively in the West for crossing upon range ewes. Because of its wide range of adaptability and consequent popularity, it is doubtful whether there is a State in the Union that does not possess flocks of this breed. The Shropshire is also prominent in the show ring, as attested by the large classes exhibited. They usually overtop any other breed in respect to numbers, and there have been instances where they outnumbered all other breeds combined. It is a source of considerable satisfaction to American Shropshire breeders to know that their best sheep are not surpassed in excellence by any imported. This is also a tribute to the breed, as it indicates that the Shropshire does not deteriorate when removed from its native home, but maintains its type and soon becomes acclimatized. The winnings at the International Live

Stock Exposition indicate to some extent the prominence of the breed.

At present the Shropshire is an early maturing breed of pronounced fecundity. They are medium sized, rams weighing from 175 to 250 pounds and ewes from 140 to 180 pounds. Their wool is of good quality and weight, fleeces ranging from eight to fifteen pounds. One of the best ewe flocks in this country, comprising over 200 head, produced 10.31 pounds per head, which is a very good average. From data secured from leading Shropshire breeders, an average of eight to nine pounds is considered very satisfactory. Most Shropshire fleeces grade three-eighths blood combing or clothing.

THE HAMPSHIRE.

The native home of the Hampshire sheep is in the country of the same name, which is located in South England, bordering upon the English Channel.

The Hampshire of today is the result of the amalgamation of two native types, into which had been introduced the blood of one or more improved breeds. These two types were known as the "Wiltshire and the Berkshire Knots."

The Wiltshire sheep were native of North Devon, Somersetshire, Buckinghamshire, and Berkshire. They were the largest fine-wool sheep of Britain. They were white-faced, horned, slow-maturing sheep of inferior mutton qualities. They undoubtedly had been in existence for centuries, for it is said that the old Roman woolen mills at Winchester were supplied with the wool from these sheep. They were also known as "crooks" because of the peculiar shape of their horns.

No breed of sheep will give more satisfactory returns than the Hampshire, if accorded good care and given plenty of feed. Neither will any other breed deteriorate more rapidly, if these are denied. They are unable to rustle for themselves to the extent of some other breeds,

consequently they do not thrive upon broken or scanty pasture. They are especially adapted to an intensive system of farming, such as hurdling upon green forage crops, rape, turnips; etc.

Hampshire rams are used quite widely upon the range for crossing upon ewes of other breeds for the production of marker lambs. The Hampshire lambs are large; they grow rapidly and attain their greatest perfection while comparatively young—the reason for their wide popularity. In the East the rams are frequently used for siring “hot-house” lambs.

The Hampshire is unexcelled in early maturity, the rams commonly being used for breeding purposes when from seven to nine months old. The fecundity of this breed is very creditable, though some of the others surpass it slightly in this respect.

The principal criticism of the Hampshire is that they require the best of attention or they soon become “weedy.” They require an abundance of food and are not satisfactory where pastures are short or broken.

THE DORSET HORN.

The Dorset Horn, like the Southdown, is an extremely old breed that has been developed largely through selection. For several centuries there had existed in the country of Dorset in Southern England a type of sheep that were coarse, small, and light of carcass, especially in fore quarters, but with broad, deep loins. They had dark noses and both sexes were horned. In Somerset were a larger, lankier type, producing longer wool and noted for their large lambs. They had white faces and pink noses. These types were probably the ancestors of the Dorset Horn.

There is considerable variation in the size of American Dorsets, but rams in breeding condition should weigh from 200 to 225 pounds; ewes from 150 to 175 pounds. Their fleeces lack somewhat in weight, but are of excel-

lent quality. The fiber is very white, and discolorations are practically unknown. Ewes produce from six to seven pounds and rams from eight to ten pounds of wool. Twenty-five samples of Dorset fleece were graded upon the Philadelphia market for the United States Department of Agriculture, fifteen pounds of which were three-eighths blood combing and the other ten quarter combing wools.

The Dorsets are probably the most fertile of all the mutton breeds of sheep, ewes frequently producing twins and triplets, and occasionally quadruplets. The ewes will breed either in the spring or fall, and it is claimed that they will produce two crops of lambs per year, but it is unlikely that this can be successfully accomplished, as breeders of prominence condemn the practice as being injurious to the ewes. The ewes are excellent mothers and usually have ample milk for their lambs, whether they be singles, twins or triplets. In the United States a large percentage of the ewes lamb in the fall, many breeders having the entire crop dropped at this time. In their native shire the ewes were formerly used for dairy purposes.

The breed matures early, the lambs growing rapidly and exhibiting a bloom that they often do not retain during the weather stage.

Dorset ewes are very highly regarded for the production of "hot-house" lambs, and the grades are considered even better for this purpose than the purebreds. The East, with its large cities and consequent favorable market facilities, is especially adapted to the production of this product, which explains the distribution of the breed in this section.

THE COTSWOLD.

For several centuries certain sheep of Gloucestershire and parts of Hereford and Worcester, England have borne the name of Cotswolds. Some authors claim that

they derived their name from the region and others claim that the hills derived their name from the sheep. The derivation of the word is from "cote," a sheep shelter, and "wold," a stretch of upland. It seems that in the early days the Cotswold was a fine wool-breed, greatly famed for the quality of the wool. Later the sheep that bore the name were a large, coarse wool-breed, of great vigor and constitution. These latter sheep were undoubtedly the stock from which the present Cotswold breed has been developed, but whether the fine-wooled sheep spoken of were more remote ancestors is a question that has not been satisfactorily answered. There are stories that the sheep of this region furnished wool for the Romans 2,000 years ago, but there is probably no more similarity between the modern Cotswolds and these sheep than between the oldest modern breeds and th ancient types from which they sprung.

MARKETING MILK AND CREAM IN FLORIDA.

(By C. L. Willoughby, Professor of Animal Husbandry and Dairying, College of Agriculture, University of Florida.)

(This Article was Prepared Specially for this Department.)

There are two general ways of marketing milk—whole-sale and retail. We may further divide these methods into the selling of milk, cream, butter and ice cream. The following statement shows the relative profits secured from selling these products at various prices.

Selling 10 Gallons 4% Milk.

As bottled milk at 10c qt., 40c gal.	\$4.00
As 20% cream 17 pounds, 2 gals. at \$1.00 ..	2.00
8 gals. buttermilk at 15c.	1.20
	— \$3.20

As butter, 4 pounds at 40c.....	1.60
9 gals. buttermilk at 10c.....	.90
	<hr/> \$2.50
Or 2 gals. cream equals 4 gals. ice cream at	
\$1.50	\$6.00

Per Cent of Fat in Milk	When Milk Sells per Quart at	20% Cream Must Sell per Quart at	30% Cream Must Sell per Quart at	Butter Must Sell per lb. at
4.0	8c	37c	50c	73c
	10c	46c	66c	93c
4.5	8c	32c	46c	65c
	10c	41c	59c	82c
5.0	8c	29c	42c	59c
	10c	37c	53c	75c

It is readily seen that selling bottled whole milk at retail for 8c and 10c a quart brings the highest cash returns, but this line of work is also more expensive in labor, wear and tear of team and wagons, loss of bottles and bad debts. The loss of these items will average about 7c per gallon.

Selling cream brings in the next greatest profit and the cost for delivery charges is much smaller. In addition, the farmer retains the skim milk on his farm for feeding the calves and pigs or poultry, or he can convert this skim milk into buttermilk and sell it for very nearly half as much as whole milk.

The making of butter ranks third in total cash returns and while the sale of buttermilk will add some to the profits, there is considerable more labor involved in doing the work.

Both the cream shipping and butter making lines of work permit the farmer to remain at home to look after his farm more hours of the day than a retail bottled milk trade. Cheese making scarcely need be considered in Florida yet, until the demand for butter is supplied, as butter will pay more and require less time, and less risk.

The shipping of the whole milk is a promising line of dairy work in Florida. This relieves the producer of all trouble of retail trade and he can afford to accept a lower price for the product. Taking all things into consideration, 25c or 30c a gallon for milk shipped in 10 gallon cans is fully equal to 35c and 40c per gallon peddled in small quantities at retail. There is considerable discussion of establishing refrigerator car service for shipping of whole milk to the large cities. This would be a good method of transportation, but it will require large amounts of milk from several different stations on the route of such a car in order to make it profitable. In the meantime, shipments of milk and cream for long distances must be made by individual shippers, either by express or baggage. The leading railroads of the State are now offering transportation for milk and cream in cans in baggage cars. The rates are slightly lower than the express rates on the same bulk. It is necessary for success in this method of shipment to cool the milk or cream thoroughly before putting it in cans for shipment. It should be cooled to 40° or lower, and the cans should be covered by a special canvas jacket, or special insulated vacuum cans may be used. This equipment is rather expensive, but will pay in the long run.

Very few farmers have the right apparatus for cooling milk or cream to temperature below 40°. The ordinary Champion type of cooler with a stated amount of cool water inside the vessel does not accomplish the purpose with ordinary use. It is necessary to use crushed ice and keep the interior contents stirred continually during the cooling process. A much better arrangement is to purchase the tubular form of cooler with arrangements for constant circulation of cold water through the interior tubes. This is called the Reil type of cooler and will cost from \$15.00 to \$20.00 compared with \$8.00 to \$12.00 cost on the Champion type. The tubular cooler,

provided with a small pump for forcing ice water or brine through the coils, will cool milk or cream below 40°, which is the proper temperature for shipping.

When shipments are made by express they may be packed in wooden tubs and surrounded with three to six inches of crushed ice. This sort of containers must be shipped by express at a higher rate than baggage rate. It requires 50 to 75 pounds of ice to carry a 10 gallon can of milk 75 to 100 miles. The method used by dairy companies in New York, Philadelphia, and Baltimore when shipping long distances to Florida, is to ship a heavy pasteurized cream packed in tubs with plenty of ice, and if necessary the shipment is re-iced at proper intervals on the trip.

It will readily be seen that considering the cost of shipping equipment and cost of ice, it is best to ship only a high priced product. The over-head charges are much less per unit on a ten gallon can of cream than on a can of ordinary sweet milk. Transportation and ice will probably cost 3c to 5c per gallon, and if the product is milk, this cuts down the price considerably, but if it is cream at more than \$1.00 per gallon these charges do not affect the price so much.

The making of ice cream is still more profitable than selling bottled milk to the consumer, and every dairyman who can secure some trade in this line should cultivate and develop it. The apparatus and machinery for making ice cream in 5 or 10 gallon quantities can be purchased for \$30.00 to \$50.00, and will last a long time.

The question then of shipping dairy products and what sort of product to turn out, depends a great deal upon the market to be supplied and the distance from the same. If the producer is more than five miles from shipping station with ordinary Florida roads, it would be best to make butter on the farm and deliver butter two or three times a week either to private trade or to a grocery store that will pay at least 30c a pound, wholesale, or ship the-

butter to a good commission merchant or large consumer in some of the cities. The express rates on butter are very low, seldom more than 1c a pound. In some cases the butter milk can be sold to good advantage. If as much as 10c per gallon can be secured for butter milk and skim milk, this is nearly three times its value for feeding to animals on the farm.

In case the producer is located within two miles of a good-sized town with good roads, if he has time and inclination, the most profitable line is selling bottled milk, cream and ice cream; provided the bottles are returned, and the customers pay their debts by the coupon system with cash in advance, or any way to get the money. It is best to get 10c per quart for milk and in many localities 12½c or 15c is none too much. Down the East Coast 20c a quart is not unusual for bottled milk.

The question of blending or standardizing milk to a definite percentage of butter fat, remains to be worked out in Florida. It is a fact that the majority of Southern milk is richer in fat than the average Northern products. Holstein cows are getting a foothold in some localities of the State, but most of the owners find it necessary to purchase Jersey or Guernsey cattle to increase the fat content of the milk. Southern customers have been accustomed so long to rich milk that they insist upon having it, and will not pay for thin milk.

The best method of securing a customer when the farmer desires to ship his milk or cream, would be to take some half-pint bottles of his product, or pound carton of butter, make a visit to the city and see the prospective customers in person, show them the sample of milk and cream of different grades and make prices on the spot, and guarantee to deliver a certain amount of these products every day or week. This is the business method of handling such matters. A deal conducted by correspondence is a slow and tedious method. Cream can be shipped anywhere in Florida, as far as 200 or 300 miles, if the

price paid is high enough to cover the shipping charges and cost of production. Fresh milk can scarcely be shipped more than 50 or 75 miles to good advantage, or 100 miles at the longest limit. I have some correspondence from the new Purity Ice Cream & Dairy Company located in Jacksonville, at present the largest users and shippers of milk and cream in the State. This company offers 25c per gallon in summer and 30c in winter for milk delivered in Jacksonville. Some of the large provision companies in Jacksonville, such as Armour Company, Wilson Company, Smith, Richardson & Conroy, and others import every winter during the tourist season, thousands of gallons of cream and condensed milk from Northern cities for distribution in Florida. These companies can give some of the trade to Florida producers, but on account of buying in large quantities in the North, they secure a very low price and it would hardly be worth while to try and compete with these prices for fresh sweet cream. Cream should sell in Florida close to 15c a pint, or \$1.00 a gallon for 20% cream. \$1.50 per gallon for 30% goods, etc.

In the development of dairy work and shipping dairy products it is often advisable to suggest establishing a small skimming station where the milk from a number of farms could be skimmed, the cream cooled and iced for shipping. The equipment for this sort of station need not cost more than \$700 or \$800. A small combination churn and butter worker could be added to use the sour cream and make a small amount of butter, for an additional expense of \$100 to \$150.

Machinery for making ice cream in a little factory of this sort would probably cost \$200 to \$300. Co-operation and the shipping of dairy products in sufficient quantities to demand good rates and accommodations are some of the essential points in this work.

REPORT OF CO-OPERATIVE DEMONSTRATION WORK IN SILO CONSTRUCTION.

(By Prof. C. L. Willoughby.)

The Extension Division of the University of Florida in co-operation with the Dairy Division of the Bureau of Animal Industry, U. S. Department of Agriculture, employed Prof. C. L. Willoughby of the Department of Animal Husbandry during the summer of 1914 to assist the farmers of Florida in constructing and handling silos. An agent of the Dairy Division, Mr. J. H. McClain, was also sent to assist in beginning this work. The report of this work during two months shows a total of two concrete silos and four wood silos built in Middle and West Florida, and assistance given in the way of consultations and advice on 20 additional silo outfits in Middle and West Florida.

During the summer of 1915 Prof. Willoughby was again detailed for silo work, this time by the Extension Division of the University under funds from the State and Congressional Acts. During the two months of work a total of 10 concrete silos were built and three wood silos. In addition, advice and consultation was given on the building and filling of 25 other wood, concrete and steel silos in different parts of the State.

During the summer of 1916 the Extension Division of the University detailed Prof. Willoughby for three weeks to aid with silo construction near Sanford and Kissimmee and in the Tallahassee District. From this work a total of seven wood silos and two concrete silos were built.

LIST OF SILOS IN FLORIDA.

*Supplied the Department by Prof. C. L. Willoughby
of the University of Florida.*

The following list shows the silos in the State that have been inspected or supervised by the Extension Division of the University:

L. E. Means, Gainesville	Wood Silo, 90 tons.
J. B. Simonton, Micanopy	Concrete Silo, 100 tons.
Ocala Heights Dairy, Ocala.....	Concrete Silo, 160 tons.
C. P. Howell, Ocala.....	Steel Silo, 120 tons.
Forest J. Hyde, Jacksonville	Wood Silo, 100 tons.
Edw. Niles, Jacksonville	Wood Silo, 100 tons.
J. C. Debevoise, Jacksonville	Wood Silo, 120 tons.
C. F. Barber, McLeanny, Two Wood Silos, 120 and 60 tons.	
H. L. Chase, East Palatka	Wood Silo, 110 tons.
F. E. Bugbee, Hastings	Steel Silo, 150 tons.
John M. Park, East Palatka	Wood Silo, 50 tons.
F. N. Holmes, St. Augustine	Wood Silo, 200 tons.
C. L. Adams, Jasper	Wood Silo, 100 tons.
L. S. Harvard and R. M. Poteet, Model Dairy,	
Live Oak	Concrete Silo, 120 tons.
C. C. Welmeier, Pensacola	Wood Silo, 80 tons.
T. L. Atkinson, Pensacola	Wood Silo, 80 tons.
Ira C. Howell, Pensacola	Wood Silo, 90 tons.
Magnolia Farms, Muscogee, 2 Vitrified Tile, 100 tons each.	
John L. Edwards, Ocala, 2 Wood Silos, 110 tons each,	
S. C. Mayo, Reddick	Wood Silo, 110 tons.
S. F. Rou, Lowell	Wood Silo, 100 tons.
C. B. Howell, Lowell	Wood Silo, 100 tons.
Mrs. Ada Varn, Brooksville	Wood Silo, 120 tons.
Miss M. O. Chase, Valrico	Wood Silo, 120 tons.
W. W. Powell, Seffner	Wood Silo, 100 tons.
J. M. DeVane, Plant City	Concrete Silo, 120 tons.
J. H. Hughes, Orlando	Concrete Silo, 90 tons.
W. A. Stacy, Orlando	Steel Silo, 100 tons.
John Poucher, Wauchula	Concrete Silo, 100 tons.
J. D. Cowden, Lakeland	Wood Silo, 100 tons.
J. P. Eskildsen, Green Cove Springs, Wood Silo, 80 tons.	
State Prison Farm, Raiford ...	2 Concrete, 120 tons each.
University of Florida, Gainesville, 3 Concrete, 110, 110, 50	
Lake Land & Live Stock Co., Watertown, 1 Wood, 100 tons	
Lake Land & Live Stock Co., Watertown, 2 Con. 200 t. ea.	
R. W. Turner, Fort White,	Wood Silo, 100 tons.

A. B. Small, Fort White	Wood Silo, 100 tons.
B. F. Williamson, Gainesville	Wood Silo, 120 tons.
R. G. Johnson, Tallahassee ...	2 Tile Silos, 110 tons each.
O. W. Jefferson, Pensacola	Wood Silo, 80 tons.
T. L. Atkinson, Pensacola	Wood Silo, 80 tons.
R. H. Wehmeyer, Pensacola	Wood Silo, 80 tons.
W. B. Brooks, Pensacola	Wood Silo, 80 tons.
Clark Chavers, Century	Concrete Silo, 120 tons.
W. M. McCurdy, Century	Concrete Silo, 100 tons.
Walter H. Johnston, Pine Barren,	Concrete Silo, 110 tons.
O. G. Elmore, Pensacola	Concrete Silo, 80 tons.
W. C. Barrineau, Pensacola	Wood Silo, 100 tons.
Jas. Cameron, Sanford	Concrete Silo, 120 tons.
L. H. Ingraham, Kissimmee	Wood Silo, 100 tons.
J. W. Miller, Kissimmee	Wood Silo, 100 tons.
Edgewater Farms, Kissimmee,	2 Wood Silos, 100 tons ea.
W. H. Averitt, Tallahassee	Concrete Silo, 110 tons.
R. G. Johnson, Tallahassee,	3 Concrete Pits, 90 tons each.

Total number 165.

Additional number of silos reported by the demonstration agents of the several counties of the State, 131.

Total number 296.

LIST OF COUNTY DEMONSTRATION AGENTS IN FLORIDA AND THEIR POSTOFFICE ADDRESS.

County—	Agent	Address
Alachua	W. E. Brown	Gainesville
Bay .....	.....	Panama City
Brevard	A. R. Nielsen	Melbourne
Calhoun	J. E. Yon	Blountstown
Citrus	W. E. Allen	Leesato
Clay .....	.....	Green Cove Springs
Duval	W. L. Watson	Jacksonville
Escambia .....	.....	Gonzales
Gadsden	M. N. Smith	River Junction
Hernando	J. T. Daniel	Brooksville
Hillsborough	R. T. Kelley	Plant City
Holmes .....	.....	Bonifay
Jefferson	M. C. Gardner	Monticello
Lafayette	D. C. Geiger	Maya
Lake	Wm Gomme	Tavares
Leon (white)	D. P. Coffin	Tallahassee
Leon (colored)	Frank Robinson	Tallahassee
Liberty	A. W. Turner	Bristol
Madison	C. D. Gunn	Madison
Marion	R. W. Blacklock	Ocala
Nassau	James Shaw	Hilliard
Orange	C. H. Baker	Orlando
Osceola	B. K. Evans	Kissimmee
Pasco	R. T. Weaver	Bade City
Polk	A. A. Lewis	Kathleen
Putnam	L. Cantrell	Palatka
Seminole	C. M. Berry	Sanford
St. Johns	H. C. Lawton	Hastings
St. Lucie	A. Warren	Ft. Pierce
Suwannee	O. W. Caswell	Live Oak
Taylor	H. I. Matthews .....	.....
Wakulla	W. T. Green	Arran
Waltun .....	.....	DeFuniak Springs
Washington	D. G. McQuagge	Chipley
Jackson	S. W. Hlatt	Marlanna
Lee	J. M. Boring	Ft. Myers
Volusia	R. E. Lentest	DeLand

FIG GROWING IN FLORIDA

By H. S. EMMOTT, *Chief Clerk, Department
of Agriculture.*

That the fig has not long since been developed as a commercial fruit may be attributed chiefly to the inability thus far to produce a marketable dried fig, the fig of commerce in the humid Southern climate. Moreover, the fresh fruit, which is highly esteemed both by those who grow it and those who have acquired a taste for it, is practically unknown in large commercial centers, being an extremely poor shipper under usual conditions.

Fresh figs are not known or appreciated in the Northern markets, and consequently the demand is too limited to encourage large shipments. The fruit is more perishable than any other that is generally marketed. It can be handled only by the most careful and experienced persons, and even then it is not in a condition to show its best quality. Ripening in midsummer, when the Northern markets are crowded with many well-known fruits, and not being especially attractive to the eye, fresh figs would at best gain favor slowly.

As a domestic fruit, however, the fig is of prime importance, for in addition to its use direct from the tree, it may be either canned or made into jams, marmalades, jellies or preserves. It is a wholesome fruit and in the older fig growing countries is an important food. The fig should never be eaten until thoroughly ripe, since green figs contain an acrid milky juice which not only has a disagreeable flavor, but is unhealthful. This trouble disappears when the fruit is ripe.

They are eaten fresh from the tree or are served on the table with sugar and cream. They can also be stewed, and made into puddings and pies, and when canned or preserved they make an acceptable table delicacy throughout the year.

For canning, figs should be picked when still firm enough to hold their shape. To secure the best results they require the use of more sugar than do some other fruits. If undersweetened, they seem tasteless and lacking in quality. The amount of sugar used and the method of procedure vary greatly in different households. A pound of sugar to three or four pounds of fruit would probably suit most tastes, though some prefer the regular "pound for pound" preserve. Ginger root or orange peel is sometimes added to give variety of flavoring, and figs are often made into sweet pickles by adding spices and vinegar. Figs are sometimes peeled before canning and this is considered to increase their delicacy of flavor.

More frequently, however, they are cooked unpeeled and with the stems on, just as they come from the tree. They hold their shape better and look more attractive when treated in this way, and the difference in flavor, if any, is very slight.

Figs are occasionally dried for household use, but as they ripen during the season of frequent summer showers, this is so troublesome that it is not often attempted. A nice product could doubtless be made by use of fruit evaporators, but these are seldom used this far South.

The future commercial development of the fig in the South probably lies in the shipment of selected fresh figs to the larger towns within four hundred to eight hundred miles or so from the source of production, and in the consumption of the surplus crop, and inferior grades by the canneries. Figs have been canned on a small scale for many years in lower Mississippi and Louisiana, and the industry is now being extensively developed along the Texas coast. There is no reason why figs cannot be canned with equal success in Florida. When canned, made into preserves, marmalades, etc., they command a ready sale at profitable prices. The canned product is liked by every one, and the present limited output is disposed of at high prices. According to recent press reports from Texas, several hundred thousands of fig trees have been planted by farmers and truck growers in the coast country of that State during the past few years.

The fig will grow in a variety of soils and is generally adapted for back yard and garden condition, flourishing with little care or attention. There is a scarcity of experience in the South relative to its culture under field conditions. It requires an abundance of plant food, however, and is relatively a surface feeder, the depth of the feeding roots depending to a great extent on the distance to moisture. It reaches its highest development on a fertile, moist, but well drained, loamy soil, containing an abundant supply of lime. In general, lowland soils which

do not overflow, or which can be readily drained to a depth of three or more feet, will prove ideal for the fig orchard.

Trees will make satisfactory growth on fertile soils without the use of additional plant food. If either lime, phosphoric acid or potash is lacking, it should be liberally supplied, especially when the trees reach the bearing age.

A good annual mulch is the best fertilizer that can be given the fig, supplemented when the trees are of bearing age and the growth of the wood is vigorous, by the addition of phosphoric acid and potash. Five or six pounds of acid phosphate and two to four pounds of muriate potash per tree would not be too much. Eighty pounds of kainit or a peck or so of hardwood ashes may be substituted for the muriate of potash and would prove profitable; but it should be applied separately and never in conjunction or mixed with either the mulch or commercial fertilizer.

The littings are taken during the winter from wood grown the previous season. It is essential that the wood be of the right degree of maturity or the rooting process will not be successful. When the wood is cut the surface of the wound should be moist and covered with small drops of milky white sap. The length of the cuttings depends upon the moisture of the soils. If the soil is quite moist they may be as short as from 6 to 10 inches, but if the surface soil be dry they must be long enough to extend down into the moisture, if it be two or more feet. Cuts should be made just at the joint, at both base and top. This is important, for the fig has a solid stem at the joint, but has a pith in the center of the stem between the joints which quickly decays, and the wood will always die back to the first joint. If decay once starts it is very likely to extend beyond the first joint and destroy the cuttings. Insert the cuttings to the top end in rich moist well drained land. It is essential that the soil be well

packed at the base of the cutting, for if an air space be left, the cutting will likely shrivel without rooting.

Where the climate is too severe to plant the cuttings immediately in the open, they may be bundled and buried until spring, as with grape cuttings. It is frequently advised that the cuttings be planted in the site the tree is to occupy permanently, as the fig is often severely set back by transplanting. When transplanted to the orchard from the nursery row the roots should be carefully protected from drying out. It is well to plant two or more cuttings in each tree position. This will tend to lessen vacancies in the orchard, and the excess number can be taken out later. Planting distances differ with the varieties grown, and with varying soil and climatic conditions. Available figures indicate that 12 to 16 feet, with every other row removed when the trees begin to crowd, will be sufficient for most varieties. This would leave the permanent planting 16 by 24 feet.

No general system of orchard cultivation has been worked out for the fig. Some advocate as little culture as possible, since the fig is a shallow feeder. If the preparatory plowing, as well as subsequent cultivations are made as deep as is consistent with the nature of the soil in each case, the roots will be encouraged to feed more deeply and the danger from mechanical injury confined largely to thin soils.

On the thin soils which abound in many parts of the State, it is difficult to cultivate without doing serious injury to the roots. Mulching heavily near the tree with any available material that will hold moisture and keep down the weeds will be found a good plan. The middle of the rows can be kept clean by a shallow plowing and barrowing without disturbing the mulch and without injury to the roots protected by it. When the weeds and grass are not allowed to get too big a start, the small toothed cultivator or an acme harrow will prove efficient tools for surface culture. The practice in Texas, where

the soil is a heavy clay loam, has been to disk the orchard lightly at frequent intervals during the spring and early summer to keep down the weeds and conserve the moisture. This method proved satisfactory for tree growth.

Frequent pruning is considered detrimental to the fig tree. The quality of the fruit is not improved, and the quantity is usually decreased thereby. The general advice is given to prune only sufficiently to shape the young tree, to remove all injured wood, and to thin out the head of the tree to admit air and sunlight. All cuts should be made at a joint, and as a rule the branches or canes should be completely removed, rather than stubbed back. When a branch is only partially removed, the numerous shoots forming below the cut make the head irregular in shape and necessitate more pruning later on. Where the fig is to be grown as a standard tree, pinching back the leader during the growing season will hasten the development of the lateral branches. The use of low branching standards to shade the soil is advisable in sections where long continued droughts occur. The same effect may be produced by starting two or three main stems from the ground. The latter form of tree is less liable to break down under a heavy crop. In colder or exposed sections, where the bush or stool form is grown, pruning should be limited chiefly to the removal of weak or injured canes.

The Celeste, Brown Turkey, Magnolia, Blue Genoa, Green Ischia, and Brunswick appear to be the most widely grown general purpose varieties. The prospective grower, however, will be assisted in the choice of varieties for different purposes and sections by consulting some of the latest authorities on this fruit. He should also seek the advice of local practical growers, since varietal names are not the same in all sections, and, furthermore, well-known varieties are held in different esteem in different sections. The Celestial or Celeste is preferred for canning in the northern Gulf Coast Region, while a variety

locally known as the Magnolia, but said to be identical with the Brunswick grown at the Texas station, is largely used for canning in the coast region of that State.

The fig has thus far been relatively free from insect pests and fungus diseases. Its worst enemies appear to be wet weather and fruit depredators, such as birds, June-bugs, wasps and other insects. The birds pay their score most royally by the destruction they visit upon insects injurious to other crops. Fungus affections are fortunately few and do not effect a great amount of damage, if we except the operation of the ferment production the fig "sour" which is almost always a concomitant of prolonged wet weather. A leaf rust sometimes prematurely defoliates the trees, but does not do much harm. Although the cotton root-rot fungus (*Ozonium auricomum*) is said to occur on the fig, no particular damage from this source has been thus far reported.

The nematode (*Heterodera radiciola*) a minute worm which causes the disease known as root knot by infesting the soft fibrous roots, thrives best in moist sandy soils, and is more or less troublesome throughout the entire coast region, but they are not a serious drawback.

Figs develop so rapidly that a vacancy is soon filled, and the chance of the malady, whatever it may be, involving the rest of the plant, is thereby reduced. Yet it is well to be first assured that some actively injurious agency and not deficient nourishment is the operating cause. Therefore noting any apparent weakness or deterioration the sickly individual should receive a top-dressing of nitrate of soda protected by a good mulch. If this fails to renew its vigor and the tree still maintains an abnormal appearance, grub it out and renew.

During the long continued rainy weather or in wet soils the crop often sours on the tree. Aside from attention to drainage, and using care not to over-irrigate, little can be done for this trouble.

The fig should be thoroughly ripe when picked for im-

mediate home consumption, and only a trifle green when picked for shipment.

It must be picked fully ripe to be worth eating and cannot be gathered prematurely, like the peach or plum. But a day's wilt somewhat improves its quality and increases the sugar content, provided it is carefully handled. After twenty-four hours, however, the danger line is reached and fermentation is imminent. It must, therefore, be handled rapidly as well as tenderly.

Gathering the fig is a difficult and clumsy process when the fruit can not be reached by hand from the ground, on account of its very soft character. It is almost as troublesome to gather safely as is the persimmon, and the slightest fall ruins it. Yet the fig tree, while possessing brittle wood, and therefore not to be climbed, is fortunately not lofty, as a rule, and its fruit is readily reached by the help of a stepladder. From the ground the fruit can be conveniently reached by means of a home-made "gatherer," or "fig cup," constructed very simply by tacking a baking powder can to a pole of any desired length, first filing a portion of the rim of the can to a cutting edge. For horizontal work—reaching out from the ladder for a distant fruit—a modification may be made by tacking the can to a pole at a right angle to it, like a dip net.

Shipping must be effected in either berry boxes or extremely shallow trays—preferably the former. The standard 24-quart strawberry crate is the best package to use. Formerly, only nearby markets were practicable, but with improved transportation facilities and refrigerator cars, they should be easily transported to market several hundred miles distant.

It should be borne in mind, however, that although figs grow successfully in almost every garden in the State, there are as yet no extensive fig orchards in existence and that every such planting will be, to a large extent, an experiment in which the individual planter must work

out questions pertaining to soil, climate and varieties, as well as many of the details of cultivation. In general it may be said that other conditions being equal, the farther south the fig is grown the greater will be the chance of success.

THE CANNING AND PRESERVING OF VEGETABLES AND FRUITS

*A Compilation of Information Relating to the Above
Subjects From Numerous Sources.*

By H. S. ELLIOT.

Chief Clerk, Department of Agriculture.

Much demand has been made upon the Department recently for reliable information on these subjects. To supply this in a reliable form the writer has gathered from many sources the information that follows:

PRESERVATION OF FOOD AT HOME.

Statistics show that approximately one-half of the products of the garden truck farm and orchard go to waste, while one-half of the world goes to bed hungry at night for the want of these same foods. Be that as it may, we do know that much of the world gets up hungry every morning, and that those wasted food products would fill "many an aching void," to the mutual advantage of producer and consumer, if distance and marketing facilities could be overcome.

Almost every housekeeper has at some time "put up" fruits and vegetables with more or less success, often less; then become discouraged and finally decided that factory canned goods are cheaper than "bothering with" home canning. The many canning clubs of girls, by canning the home grown products, are proving that from six

cents to fifteen cents per can may be saved, besides utilizing products that would otherwise go to waste.

WHY FOOD SPOILS OR DECOMPOSES.

In the old method of home canning we worked according to vague rules without knowing or asking why the canned goods often "worked" or spoiled. We no longer work by faith, but demand the evidence of things not seen by the normal vision, and such great scientists as Pasteur and Lebig have given us the benefit of their microscopic observations. They tell us the air, water, soil and all vegetable and animal life are the hosts for millions of little micro-organisms, called bacteria, yeast and molds. They spoil for our use vegetables, fruits and meats, by forming acids, carbonic-acid gas, and other compounds, useless and harmful to us. Generally, bacteria do not develop in substances containing a high per cent of sugar, hence preserves and jellies are not so hard to keep. Neither do bacteria thrive in vegetables or fruits containing a large amount of acids. This is why lemons, rhubarb, and other acid fruits and vegetables keep a long time, while when put up only with cold water. The food stuffs rich in protein, like beans and peas, are hard to keep because these are the favored food of bacteria, which are more difficult to destroy than yeast or molds, for they reproduce by spores that are very resistant to heat. These spores, if not destroyed in the first boiling, will vegetate or begin to grow at a very rapid rate, so you see the necessity of the second day, and even the third day sterilizing or boiling of such canned goods in order that every spore may be destroyed.

Common sense, good judgment, and careful work are bound to succeed in canning. If boiling or sterilizing is properly done, so that all germ life is destroyed, and the cans sealed air tight, it is impossible for fruits, vegetables or meats to decay; hence, the necessity of the repeated "sterilize," "sterilize," will be obviated.

CANNING OUTFITS.

Any one can can, with even the slightest outfit, if the right care is taken. The old open kettle method can be used if jars, cans, tops and vessels are sterilized before putting in the fruits or vegetables, and then taking the precaution to cook or sterilize one hour for three successive days, to destroy all germs or spores.

A common wash boiler, with a fitted top and racks made with handles to lift out the cans or jars, is a convenient and easy utensil to use on the kitchen stove. A large lard can or wash tub may be used out of doors, with any ordinary charcoal furnace, or an old wash tub, inverted and fitted with a joint of stove pipe, and a door cut out on the opposite side for putting in the fuel; or even a hole in the ground with a stove pipe or other flue will answer for the fire box in using the "cold-pack" method. A portable home canner is not expensive and is as much a necessity in the home as a cultivator, sewing machine or cream separator. A portable hot water canner, with the firebox attached, can be bought for from \$5 to \$10. The steam pressure outfits are more expensive, but takes less time, for the greater heat secured accomplishes sterilization more rapidly. Steam under fifteen pounds pressure destroys all bacteria and spores.

METHODS OF FOOD PRESERVATION.

1. Harmful Chemical Preservatives.
2. Low Temperature.
3. Drying.
4. Heat.
5. Harmless Chemical Preservatives.

Harmful Chemical Preservatives, or the So-Called Preserving Powders, Which Prevent the Growth of Bacteria.—While some of these are not harmful in themselves, yet they are dangerous as food preservatives, for food already in an unwholesome condition from bacteria may be preserved in that condition and become a menace

to the user. The use of such chemicals is a violation of the pure food laws and should not be used.

Preservation by Means of Low Temperature.—The making of artificial ice and refrigerators have made the preservation of food on a large scale of greatest importance. Bacteria, yeasts and molds do not vegetate at a low temperature.

Preservation by Means of Heat.—This, combined with harmless chemicals, such as sugar, salt, spices and vinegar, are the chief methods used in the home.

CANNING TERMS DEFINED.

Scald means to subject the fruit or vegetables to boiling water for about five minutes, so that the skin thereof can be easily removed.

To blanch is to allow the fruit or vegetables to remain in the hot water for a longer period than five minutes to remove the skins or to soften the product. It is used for such things as corn, beans, beets, etc.

Cold dip means to dip the product into cold water after scalding or blanching, so that it can be more easily handled.

Sealing (see also "capping") is to place the caps or tops on the jars or cans. In the case of jars it is advisable to strew the tops on lightly at first and then fasten firmly when the jars are cool.

Sterilizing means to boil until all germ life is destroyed. The time required for sterilizing various products is given in the "Time Table" following.

Exhausting. This means to cook the canned material for a few minutes before tipping to let the air out.

Zinc flux is made by adding to muriatic acid as much zinc as it will dissolve and then adding an equal amount of water.

Sal Ammoniac Flux. This is made by mixing equal parts of dry sal ammoniac with chips of solder. Solder

will not adhere or stick to tin without flux or a similar substance, such as resin.

Tinning the Steel. To put the hot steel used for capping cans into zinc-acid flux, reheat it, then put it into sal ammoniac and solder, turning the steel several times until it is smooth and bright.

Capping is to solder the little tops on the cans with the capping steel. (There is a new capping steel on the market with a gasoline blast that saves time in heating.)

Tipping is to close and seal the little air vent. Some directions say exhaust and tip.

TO REMOVE SKINS FROM PEACHES, PEARS AND PLUMS.

The hardest work in canning and preserving is peeling the fruit. The pure food law allows the following method of peeling: Bring nine gallons of water to a boil; add one-half can of caustic potash or concentrated lye, and one-half ounce of alum. Lower the fruit in a wire basket or cheese cloth into the boiling solution; let remain two minutes; dip into cool water, wash thoroughly to remove the skins.

TO REMOVE SKINS FROM TOMATOES.

Place tomatoes in a wire basket or thin cheese cloth; lower into boiling water and let remain from one to five minutes until skins begin to crack; dip in cold water; remove the core with a sharp small knife, and peel the skin from the tomato.

TO REMOVE SKINS FROM BEETS AND CARROTS.

Same as from tomatoes, only let them remain in the boiling water longer.

TIME TABLE FOR BLANCHING.

Blanch peas, beans, etc.	5 to 10 minutes
Blanch corn on cob	5 to 15 minutes
Blanch pumpkins, squash, mangoes	5 minutes
Blanch okra, cabbage, sweet potatoes	5 minutes
Blanch asparagus	5 to 10 minutes
Blanch greens	10 to 20 minutes

Blanch rhubarb, beet tops, etc.	6 to 10 minutes
Scald tomatoes, plums, pears, etc.	1 to 2 minutes
Scald peaches, apricots	1 to 2 minutes
Blanch vegetables to reduce bulk	20 minutes

USEFUL TABLES FOR THE CANNER.

Cans.

The pure food law requires a minimum weight of 32 ounces of tomatoes for No. 3 cans, and 22 ounces for No. 2 cans.

When filled invert cans in tray and allow them to drain; then fill them with tomato juice. Do not fill with water.

One bushel of tomatoes will fill 18 No. 3 cans.

One bushel of tomatoes will fill 24 No. 2 cans.

1,000 No. 1 tin cans will cost about \$10.00.

1,000 No. 2 tin cans will cost about \$14.00.

1,000 No. 3 tin cans will cost about \$16.00.

1,000 No. 10 tin cans will cost about \$18.00.

Three and four color labels cost from \$1.00 to \$2.00 per thousand.

Solder-bemmed caps cost from \$1.25 to \$1.50 per 1,000.

The average freight car will hold about 85,000 No. 2 cans, or 55,000 No. 3 cans not cased.

When shipped in cases, the average freight car will hold about 43,000 No. 2 cans, and 30,000 No. 3 cans.

1,000 No. 2 empty cans will weigh about 212 pounds.

1,000 No. 3 empty cans will weigh about 310 pounds.

One case of 24 No. 2 empty cans will weigh about 13 pounds.

One case of 24 No. 3 empty cans will weigh about 17 pounds.

TIME TABLE.

Time Table For Canning Food With Intermittent Sterilization.

Food	Special Preparation Before Canning.	Time of Cooking (minutes)		
		Before Sealing.	After Sealing.	Second and third days.
Asparagus	Cut in length to fit jar. Blanch 5 minutes and drain	15	45	60
Beets	Blanch until skin is easily removed. Can whole, in slices, or in quarters.	15	45	60
Beans, Lima	Half by hand. Blanch 5 minutes.....	15	45	60
Beans, String ...	Remove strings; cut into 1 inch pieces. Blanch 5 minutes and drain before putting into cans	15	45	60
Corn	Blanch 5 to 15 minutes on the cob and scrape cob,* or score grains before cutting from the cob	15	45	60
Eggplant	Cut in thin slices, drop in boiling water and let stand 15 to 20 minutes. Drain and pack in jar	15	45	60
Pears	Shell. Blanch 5 minutes. Remove wrinkled pears. Put into cans	15	45	60
Pumpkin	Peel, cut into small blocks. Blanch 5 minutes	15	45	60
Spinach	Wash free from all sand and grit. Remove discolored leaves. Blanch 20 minutes. Drain and pack in jars ..	10	30	40
Succotash, corn .. 2-3, beans 1-3 ..	Prepare corn and beans as directed ..	15	45	75
Sweet potatoes ..	Boil until skin will peel off. Cut in convenient sizes to fit cans	15	45	60
Tomatoes	Scald from 1 to 5 minutes. Remove skins. Save any juice escaping	10	45	60
Tomato mixture, Corn 1-3, toma toes 2-3	Prepare each as directed above and mix	15	45	60

. TIME TABLE.

Time Table For Canning Food With One Period of Sterilization.

(To be followed in the use of the different types of portable home canners. For altitude of 4,000 feet or more above sea level, add about twenty or twenty-five per cent more to this schedule.)

	Size of cans, No. 3 contains 1 qt. No. 2 contains 1 pt.	Time of cooking (minutes).			
		Hot water bath outlets at 212 degrees.	Water seal outlets above 212 degrees.	Steam pressure cooker, 5 lbs or more.	Pressure cooker, 10 lbs. or more.
Apple cider	2 or 3	20	15	12	10
Apples	2 or 3	15	13	10	6
Asparagus (greens)	2 or 3	60	60	40	30
Apricots	2 or 3	15	12	10	6
Beans (Lima and string)	2 or 3	90	60	60	30
Blackberries, dewberries	2 or 3	8	9	6	3
Cherries, peaches	2 or 3	15	12	10	5
Corn without acids	2 or 3	240	180	90	60
Grapes, pears, plums	2 or 3	15	16	10	6
Hominy	2 or 3	60	50	40	35
Huckleberries	2 or 3	15	12	8	5
Okra	2 or 3	60	60	40	30
Okra-tomatoes combined	2 or 3	50	50	40	30
Oysters	1	50	50	40	30
Peas (field)	2 or 3	60	60	40	30
Peas (Garden or English)	2 or 3	240	180	90	60
Pineapples	2 or 3	30	25	10	10
Raspberries	2 or 3	15	12	8	5
Sauerkraut	3	60	50	40	25
Sausage	3	60	60	40	35
Sweet potatoes	3	80	70	60	40
Strawberries	3	20	15	10	5
Succotash	2 or 3	60	60	40	30
Tomatoes	2 or 3	22	20	10	6
Tomatoes and corn	2 or 3	80	70	60	40
Grape juice	3	15	15	10	5
Quince	3	30	25	15	10
Tomato juice	3	20	20	15	10
Pumpkin	3	50	50	40	30
Fish, pork	2	200	200	125	60
Chicken, beef	3	250	240	160	40
Figs	3	30	20	10	5
Squash	3	50	40	30	20
Spinach	3	60-90	60-90	40-60	30-40
Other greens	3	90	90	60	40
Rhubarb	3	25	25	15	10
Beets	3	90	75	60	40

SIRUPS.

Sirups for use in canning are made by boiling granulated sugar with pure water at 212 degrees F. All the impurities which rise to the top should be carefully removed with a spoon or ladle until the sirup appears clear and transparent. If the fruit is properly sterilized, the sirup will not add anything to the keeping qualities. The density of the sirup should be determined largely by the taste.

Western growers usually make their fruit sirups on the basis of $1\frac{1}{2}$ pints of sugar to 1 pint of water, while many in the East use one pint of sugar to $1\frac{1}{2}$ pints of water. This accounts in a large measure for the greater popularity of the Western canned fruits.

One pint of sugar to one gill of water makes a sirup of 40 degrees density.

One pint of sugar to one-half pint of water makes a sirup of 32 degrees density.

One pint of sugar to one pint of water makes a sirup of 24 degrees density.

One pint of sugar to $1\frac{1}{2}$ pints of water makes a sirup of 17 degrees density.

One pint of sugar to 2 pints of water makes a sirup of 14 degrees density.

For preserving cherries, strawberries, etc., a sirup of 40 degrees density is used. For preserving currants, plums, quinces, etc., a sirup of 24 degrees to 32 degrees density is used.

For canning blackberries, blueberries, cherries, peaches, pears, plums and raspberries, a sirup of 14 degrees to 17 degrees density is used.

SIRUP DENSITY TABLE.

To enable any person to prepare sirup of any desired density, the following table is supplied. No allowance has been made in the table for evaporation:

Percentage (or degrees) of density	Sugar	Water
	Pounds	Quarts
12 per cent.....	1½	5½
15 per cent.....	3	8½
18 per cent.....	4½	10½
24 per cent.....	6	9½
28 per cent.....	7	9
35 per cent.....	7	6½
40 per cent.....	2	1½
50 per cent.....	1	½
60 per cent.....	6	2
64 per cent.....	16	4½

The above outfits are freely advertised in the papers and magazines published in the interest of the various branches of Agriculture, and are usually reasonable in price as well as efficient.

PRESERVES, JELLIES AND MARMALADES.

Sour fruits or slightly unripe fruits and berries, are best for jellies, as the pectin is at its best then; when too ripe, or when the fruit ferments, or is cooked too long, the pectin undergoes a change and loses its power to jelly. Juicy fruits should not be gathered wet as they absorb quantities of water and would require too much boiling. If the fruit is dusty wash quick to prevent absorbing too much water. It requires more work and skill to make jelly out of fruit to which water must be added than from juicy fruits.

GUAVA JELLY.

Undiluted guava juice consists of over 90 per cent. of water, about 5 per cent. of sugars, and a small percent-

age of pectin and acid. It also contains some substances which give the color and flavor to the jelly made from it. Pure guava jelly usually contains about 20 per cent. of water, about 75 per cent. of sugars, and the rest is pectin, acid, etc. During the boiling of the mixture of juice and cane-sugar, the acid acts on the sugar, and changes part of it into invert sugar, so that it forms a sirup; and if there is enough acid the sugar will not crystallize out. This strong sirup causes the pectin to set as a jelly. The pink color is deepened by longer boiling, or by more acid.

AMOUNTS OF JUICE AND SUGAR.

Suppose a large amount of water is added when cooking the guavas. Now if equal amounts of this diluted juice and cane-sugar are taken to make the jelly, there may not be enough pectin, in which case the jelly will not set properly, or will be sticky if it does set; or there may not be enough acid, and the jelly will "sugar"; or there may not be enough of the guava flavor. If a large amount of water has been used in cooking the fruit, more juice and less sugar should be taken to make the jelly. If the guavas have been cooked in a double boiler without water, equal amounts of juice and sugar will yield a good jelly. It was found that the juice from two pounds of ripe guavas, with one pound of sugar, yielded less than one and a half pounds of jelly.

HOW FAR TO BOIL.

When boiling the jelly, the temperature rises as more and more water evaporates. To secure a uniform jelly, it is desirable always to stop at the same point. This can best be done by the use of a glass thermometer. Such an instrument, reading to 300° F., can usually be bought from a drug store; or if not procurable there can be purchased for 60 cents from the Arthur H. Thomas Company, Philadelphia. In a series of tests it was found that

the best jelly was made when the boiling was stopped at 235° F. It is usually necessary to stop the boiling for a moment, when using the thermometer, because of the bubbling. If the same amount of water is always used in cooking the ripe guava, and the same proportions of juice and sugar are taken, and if the temperature which is found to give the best jelly is measured with a thermometer, it will be possible to turn out a uniform product year after year.

JELLY-MAKING.

No iron or steel should come in contact with the fruit or juice. The guavas may be heated till soft in an enameled or aluminum vessel with a small amount of water at the bottom, or in a double boiler. The juice should be squeezed out through cloth in a strong press, measured, and the proper amount of granulated sugar added. A deep aluminum vessel is useful for boiling down the juice. When the sugar has dissolved, the hot solution can be filtered through cloth. It is boiled down till the thermometer marks the proper temperature, and then run into glasses or molds.

BLACKBERRY JELLY.

Pick out all stems and leaves, put the berries in a kettle with some water if fruit is not very juicy, heat slowly, mash with potato masher and turn into a colander over which a cheese cloth is folded, to drain. Measure juice and add equal amount of sugar. The same method can be used for dewberries, currants, strawberries, etc.

PLUM JELLY.

Use unripe fruit. Put in preserving kettle with one quart of water to each peck of fruit. Cook until plums fall to pieces, then strain and add one pint of sugar for every pint of juice. Simmer slowly, then put in glasses.

All wild fruits such as grapes, raspberries and wild

plums make excellent jellies. If the jelly is covered with paper dipped in alcohol before putting away all mold spores will be destroyed, then another paper coming down over the sides of the glass is tied or pasted over the first one.

FRUIT JUICES.

Cook the fruit in preserving kettle, never in one of tin or zinc, however, as that produces an oxide that is poisonous. Crush the fruit with a wooden spoon or potato masher, boil and drain through a sieve or colander with cheese cloth in it. Put the juice in sterilized bottles, place in water and boil 30 minutes, seal and put in a cool place to keep. If sweet juice is desired add sugar to it before sealing.

Peach, plum, and grape juice are all made alike and very similar to jelly. If sugar is used a gill to the quart of juice is used. This juice is not boiled down as in jelly, only brought to a boil in order to skim and put in bottles hot; crushed fruits may be saved as jams, marmalades or vinegar.

FRUIT VINEGAR.

Add warm water to the fruit peelings or crushed fruits left over from jelly or juice, set aside until it ceases to ferment, then drain off in jugs, cork and keep cool. The mother from vinegar or small yeast cake will hasten the process. This applies to vinegar made from all fruits and grapes.

FIG PRESERVES.

(Factory Method.)

Use equal weight figs and sugar, add water to begin sugar to one quart jar. Water enough to cover. Place in canner and cook one hour.

FIG PRESERVES.

(Home Method.)

Use equal weight figs and sugar, add water to begin

the cooking. Add sliced lemon, one to each gallon. Cook until sirup thickens.

PLUM PRESERVES.

Use one-half as much sugar as fruit by measure. Pick fruit, cover with water and boil until sirup thickens. The same process is used in preserving peaches and other fruits.

MARMALADES.

Marmalades are simply crushed fruits or berries cooked slowly, as no water is added. Measure the fruit and add one pint of sugar to each quart of fruit. Cook slowly and stir frequently. This is an excellent way to preserve fruits and berries too ripe to preserve whole. Cook about two hours over slow heat. Put the marmalade in sterilized jars and seal.

MELON RIND PRESERVES.

Cut off all red and green parts of the melon. Add one-half as much sugar as melon by weight to remaining white rind which should be in small sliced pieces. Sliced lemons, one to each gallon, improves the preserves. Boil until sirup thickens.

GRAPEFRUIT JUICE FOR SUMMER BEVERAGE.

A Simple Method of Making a By-Product to Save the Waste of Grapefruit.

A simple method of bottling the juice of grapefruit for use in making acid beverages as a means of gaining a useful by-product from hundreds of thousands of cases of grapefruit which now are wasted.

All that is necessary is to bring the grapefruit juice to the boiling point in a porcelain-lined or enameled kettle, pour it while still hot into bottles, which then are hermetically sealed. The juice when so handled will keep indefinitely, and provides a base for grapefruit-ade or

other acid beverages having the characteristic acid and flavor of the fruit. Experiments show that it is highly important that the bottle be completely filled so that no layer of air be left between the top of the juice and the cork or seal. Where air in any amount comes in contact with the top of the sterilized juice it will cause the juice to change its color. In handling the juice it is particularly important that it be kept from coming into contact with iron or other metals easily acted upon by acids.

It is also possible to freeze the grapefruit juice into solid ice and then by whirling the ice in a centrifugal machine, to take out a large part of the water, and leave the solids and flavoring matter of the fruit. This freezing and concentrating of the juice greatly reduces the bulk and makes a product which can be sterilized by heating and kept indefinitely. Care must be taken to keep the juice from coming in contact with iron.

Those who wish to make a clear juice may filter the grapefruit juice before it is heated by adding to it from two to three per cent (about three ounces avoirdupois to the gallon) of infusorial or Fuller's earth well washed with hot water. The mixture is then forced through a non-metallic filter press and the clear juice reheated and boiled. With the freeing process the juice is filtered after concentration, about twice the amount of infusorial or Fuller's earth being used per gallon of concentrate.

The same process is not suitable for bottling the juice of oranges and lemons, which will not retain their flavor if handled in this way.

While as yet there is no commercial market for sterilized grapefruit juice, it is believed that many persons will find this juice, with the addition of water and sugar, a pleasant variation from lemonade or limeade. Those who like grapefruit should find the beverage inviting. The method is so simple that those in regions where grapefruit are cheap and plentiful can prepare this product on a small scale with ordinary household appliances.

THE VALUE OF PASTURAGE IN PIG RAISING AND AS A MEANS OF RE- DUCING THE COST OF THE PRODUCTION OF PORK.

By H. S. ELLIOT.

Chief Clerk, Department of Agriculture.

Successful pig raising depends upon many things, chief among which are: The right kind of animals; the best method of feeding and management; quality of the breeds and at least a fair knowledge of the relative value of the numerous kinds of feeding stuffs, so that the herd may be maintained cheaply and efficiently and that the pork be produced at as low a cost as possible. The pigs must, of course, be supplied with the nutrients necessary to a proper development of the carcass. Therefore the question of feeding rightly to attain the ends desired, is a vital one, but one which intelligent management and careful investigation will solve to the grower's advantage. Good animals and good rations, however, are not all that is necessary to successful hog raising. The herd must be properly managed so as to get the necessary amount of exercise, be kept healthy and thrifty, free from vermin and worms, good shelter, etc. These details which are often overlooked or neglected are important and go very far in reducing the cost of pork production.

In addition to the above, the principal elements in the economical production of pork are the combination of pasturage and feeding of grain and other products, mainly concentrates, composed of mixed, ground and cracked cereals, which can be generally produced on the average farm. The old way of turning the hogs out to run wild on the open range, taking care of themselves, in a way, feeding on mast, roots, etc., was to a certain extent permissible under existing circumstances, but experience and investigation have demonstrated that a system of cultivated crops, which provide grazing throughout the grazing and

fattening seasons with grain near the end of the fattening period, is not only more healthful to the stock, but is far-reaching in the reduction of cost. Probably the best plan, and the one recommended by this Department and also practiced quite largely by successful growers, is to graze the pigs on oats, rye, clovers and grasses of various kinds and towards spring add to the grazing crops, rape, millet, barley, etc., and towards summer and throughout this period into the fall the oat stubble, peas, soy beans, hurr clover, velvet beans, etc. During this time a small amount of grain should be given about once a day, which will carry the pigs along well and cheaply, and at the same time, making good rate of growth. Also in winter the feeding of leguminous hays, which all hogs like to eat, should be practiced in addition to the concentrated feeds which will assist very materially in cheapening the cost of production.

Again the following of cattle by pigs on limited areas, or where the cattle are herded at night and fed on grain or hay, is also an important item in economical feeding, because of the waste they will pick up.

When silage is used in feeding cattle, it is also in the line of economy to feed the silage to hogs, which can be allowed them in quantity without limit, as they will eat only what they want, without danger. This also takes to a considerable degree the place of grazing and even with it, is of great assistance, adding to its efficiency as also its economy.

Another way in which the pig economically returns a profit to the owner not usually considered is by bringing much better returns for feed of inferior quality than could possibly be obtained by selling such feed. In this connection it must not be forgotten that the pig removes only a minimum quantity of fertilizing material in his carcass while he leaves a maximum amount in the form of manure. These are also important points to be observed in the economical production of pork.

The fattening period generally begins with the earliest ripening corn and peas, which are usually in condition to graze about August 1st to 15th in Florida. Both the fall and spring pigs can then be turned out into the fields, the young pigs picking up most of the grain which the large hogs usually waste. This crop will generally carry the pigs till about October and then the velvet beans, soy beans and peanuts are ready for grazing. As before stated, the smaller pigs will pick up the scattered grain on which they will make rapid gains.

Soy beans and peanuts are low in carbohydrates, but are very rich in protein. Therefore corn should be fed in connection with those to balance the ration; the pigs will graze on this crop until about the first of December when the sweet potato crop is thoroughly matured and ready to feed. Then the eight to twelve months old pigs are about right in condition and size to pen for fattening and finishing on corn, and if advisable or desired, also fed with the corn a little cotton seed meal with corn, or better still allowed to graze on the potatoes within narrow limits so as not to give them too much exercise.

In this method of feeding the hogs it is demonstrated that the largest gains per acre are almost invariably made with sweet potatoes, but this kind of fat is soft and oily and to offset this so as to obtain better results from the sweet potatoes, about one pound each of corn and cotton seed meal per head, daily, should be fed. After grazing on the potatoes for from three to five weeks as above suggested, the pigs will usually be about ready for market, the final and finishing feeding being corn or corn and cotton seed meal. What potatoes are left in the field can be gathered by the brood sows and young pigs.

It will be noticed that in the above methods the hogs are required to gather practically all of their food. This not only saves a great deal of labor, but by actual experience has proved to be an economical practice, the pigs making under this treatment from one-fourth to one-

third greater gain per acre when allowed to gather the crops themselves, than if confined and the food carried to them. This is due in great part to the fact that they will eat a large proportion of the stems and leaves of the pea vines, velvet beans, soy beans and peanuts, all of which, especially when the peas and grain are included, are rich in protein.

If the above methods are carefully and intelligently observed and followed out, it is reasonably certain that pork can be produced in this State within the limits of three cents per pound. In fact, there are many instances and many localities where this is regularly accomplished, and the methods herein described are common practice.

HOME CURING OF MEATS

(By H. S. ELLIOT.)

At this season of the year, a great many inquiries are received asking for information as to best methods and processes for the home curing of meat in Florida. The following methods have been proven entirely reliable in all parts of the State, and we can recommend them as sure and safe.

Curing meats with brine is a good method for farm use. It is less trouble to pack the meat in a barrel and pour brine over it than to go over it three or four times and rub in salt, as in the dry-curing method. The brine also protects the meat from insects and vermin. Brine made of pure water and according to the direction in the following recipes should keep a reasonable length of time. During warm weather, however, brine should be watched closely and if it becomes "ropy" like sirup, it should be boiled or new brine made. A cool, moist cellar is the best place for brine curing.

Pure water, salt, sugar or molasses, and saltpeter are all the ingredients needed for these ordinary curing of

meat. The meat may be packed in large earthen jars or a clean hardwood barrel. The barrel or jar may be used repeatedly unless meat has spoiled in it. It should be scalded thoroughly, however, each time before fresh meat is packed.

Curing should begin as soon as the meat is cooled and while it is still fresh. Ordinarily 24 to 36 hours after slaughter are sufficient for cooling. Frozen meat should not be salted, as the frost prevents proper penetration of the salt and uneven curing results.

SUGAR-CURED HAMS AND BACON.

When the meat is cooled, rub each piece with salt and allow it to drain over night. Then pack it in the barrels with the hams and shoulders in the bottom, using the strips of bacon to fill in between or to put on top. Weigh out for each one hundred pounds of meat, eight pounds of salt, two pounds of brown sugar, and two ounces of saltpeter. Two ounces of finely ground black pepper may be added with benefit. Dissolve all in four-gallons of water, and cover the meat with the brine. For summer use it will be safest to boil the brine before using. In that case it should be cooled thoroughly before it is used. For winter curing it is not necessary to boil the brine. Bacon strips should remain in this brine four to six weeks; hams six to eight weeks. This is a standard recipe and has given the best of satisfaction. Hams and bacon cured in the spring will keep right through the summer after they are smoked. The meat will be sweet and palatable if smoked properly, and the flavor will be good.

PLAIN SALT PORK.

Rub each piece of meat with fine common salt and pack closely in a barrel. Let stand over night. The next day weigh out ten pounds of salt and two ounces of saltpeter to each 100 pounds of meat and dissolve in four (4) gal

lous of boiling water. Pour this brine over the meat when cold, cover and weight down to keep it under the brine. Meat will pack best if cut into pieces about 6 inches square. The pork should be kept in the brine until used.

HOW TO SMOKE MEAT.

Pickled and cured meats are smoked to aid in their preservation and to give flavor and palatability. The creosote formed by the combustion of the wood closes the pores to some extent, excluding the air, and is objectionable to insects.

HOUSE AND FUEL.

The smokehouse should be eight or ten feet high to give the best results, and of a size suited to the amount of meat likely to be smoked, six by eight feet being large enough for ordinary farm use. Ample ventilation should be provided to carry off the warm air in order to prevent overheating the meat. Small openings under the eaves or a chimney in the roof will be sufficient if arranged so as to be easily controlled. A fire pot outside of the house proper with a flue through which the smoke may be conducted to the meat chamber gives the best conditions for smoking. When this cannot be well arranged a fire may be built on the floor of the house and the meat shielded by a sheet of metal. Where the meat can be hung 6 or 7 feet above the fire this precaution need not be taken. The construction should be such as to allow the smoke to pass up freely over the meat and out of the house, though rapid circulation is at the expense of fuel.

FILLING THE HOUSE.

Meat that is to be smoked should be removed from the brine two or three days before being put in the smokehouse. If it has been cured in a strong brine, it will be best to soak the pieces in cold water overnight to prevent

a crust of salt from forming on the outside when drained. Washing the meat in tepid water and scrubbing clean with a brush is a good practice. The pieces should then be hung up to drain for a day or two. When drained they may be hung in the house. All should be suspended below the ventilators and should hang so that no two pieces come in contact, as this would prevent uniform smoking.

RELATING TO INSECTS INJURIOUS TO STORED GRAIN, AND SUGGESTIONS FOR THEIR CONTROL

By H. S. ELLIOT.

Chief Clerk, Department of Agriculture.

In the words "stored grain" it is intended to include corn, cow peas of all varieties, beans, sorghum, kaffir corn, Milo maize, rice and all similar seeds and grains.

All of the insects attacking the above grains and seeds operate in the same way and can be controlled through the same agencies.

It is the object of this article to point out to the grower, the store-keeper or the dealer, the best methods of exterminating or at least checking the ravages of these insects. There is quite a number of these insects, and we know of no grain that is not affected by them to greater or less extent. But there are three principal ones which are the cause of the greatest amount of injury to the seeds and grains referred to in the south and, of course, in Florida. the Angumois grain moth, the corn weevil, the black weevil or rice weevil and the red or brown or cow pea weevil. All of these weevils prey on cow peas, beans, etc. The Angumois grain moth or corn weevil was first discovered in France about 1736, as destructive to harley and also to wheat. The rice weevil is supposed to have been intro-

duced into this country from the West Indies with the earliest settlement of this country. The cow pea weevil is supposed to have originated in China, in fact it is found in all the Mediterranean regions of Europe, and abundant proof of its presence is recorded in all of the principal nationalities of both hemispheres, where it has caused the destruction of millions of dollars worth of seeds or grain every year for many years. The earliest date of which mention is made of this insect is in 1758, but it has undoubtedly existed since before the Christian era. There are many other weevils more or less destructive to seeds and grains either in the field or granary, but the above described are the principal or most important ones to this country. All of them operate in practically the same manner and can be controlled by the same methods.

EFFECT OF INJURY.

The principal injury caused by these insects is due to the operations of the larvæ which feed within the seeds attacked, whether it be cow peas, beans, corn or other seeds. Thus they have the effect of lessening the value of these seeds either for sale, for consumption as food or for planting; and as a single seed may contain a number of individuals, consuming of course much of the tissue of the seed and either damaging greatly or destroying altogether the germinating power of the seed, the importance of effective control must be realized.

METHOD OF ATTACKING SEEDS.

There is no essential difference in the manner in which these several weevils attack the seed. The female weevil begins to deposit her eggs on the young seed vessel in the blossom, on the outside of the growing pods in the field and upon the dried seed or grain. They are attached by a glutinous substance which covers and protects the egg. This covering extends to considerable extent around it.

Here the eggs hatch in four or five days and the larvæ penetrate into the growing seeds, each eating out a habitation for itself, which it enlarges from time to time as needed. In two or three weeks in summer weather or about two months in cooler weather they attain their full growth. When full grown, the larvæ transforms to pupa and develops later into the beetle stage; the pupal stage lasts only four or five days. The beetle gnaws his way out of the seed by cutting the skin of the pod or the covering placed there above referred to. The development may take place at different periods. Usually the first brood which develops in the field attain maturity about the third week in September, sometimes earlier, judging from the appearance of the exit holes in the pods, and the further fact that certain varieties of peas or seeds mature sooner than this date.

SOME VARIETIES MORE SUSCEPTIBLE THAN OTHERS.

It has been observed by those familiar with the habits of the various weevils and their methods of attacking grain or seeds, that there are certain varieties much preferred to others by each of them. It is noted that when the insect is very abundant in numbers it is not so apt to discriminate between varieties of seeds; rather if the favorite plant is not at hand or near by, the insect will not hesitate to attack any variety that may be present. There is the best evidence for the general belief that pea and bean weevils, like the grain weevils, prefer the softest grain or seed because they are more easily penetrated, and they experience greater difficulty in penetrating harder seed or grain. Certain it is that in Florida, and the far south generally, the softer varieties of corn are much worse and easier affected than the harder sorts. So it is with cow peas. The following list of cow peas are among the varieties quite susceptible to weevil attack, their choice apparently about in the order named—Blackeye, Browneye, Black, Lady, Rice, Manakin, Red

Ripper, Whippoorwill, New Era, Red Crowder, Clay and Unknown. The foregoing list contains the best of the edible varieties, but the two hardest or most resistant varieties to weevil attacks are the Iron and the Brabham peas, and the varieties of corn known usually as flint. The plant or vine of these last mentioned peas are also practically immune to the fungus diseases which affect all other varieties.

VARIOUS METHODS OF CONTROL.

The remedies for all of the insects that infest stored seeds or grain are practically the same, but, as a matter of information, we submit briefly, a synopsis of numerous remedies which have been or are considered to be more or less efficacious in the control of these insects, viz: The Hot Water Remedy—This is done by immersing the seed in water gradually heated to 140 degrees F. The practical application of this remedy is about as follows: A piece of coarse material such as burlap is placed in a kettle of the size desired or necessary, so that when weighted down with the peas or beans it will not touch the bottom or sides. This keeps the seeds from coming into contact with the heating surface and prevents them from becoming overheated and damaged. The peas or beans are then placed on the burlap and covered with water and the heat turned on or fire started. The temperature should be raised as rapidly as possible, the peas or beans stirred constantly, and as soon as the temperature reaches 140° F. the contents should be at once removed. The seed can then be planted or spread out and dried first and then planted when desired.

Holding Over Seed—This remedy has been practiced with varying success. This method is carried out by placing the seed in a tight bag or bags or some other closed receptacle. If the bags are kept in a warm room the beetles will hatch and come out prematurely and will die without doing further injury to the seed, as they are

not able to breed in dry seed. This method can only be used in a limited way.

Treatment with China Berries—It is claimed by many that china berries placed in corn cribs or pea or bean bins will keep weevils out or drive out those already there, but as experiments made for the purpose of testing the correctness of these claims have always failed, it may be assumed that these berries have but little if any effect in driving out weevils or in preventing their breeding.

Sulphur and Salt Method—The combination of these substances has on limited experiments prove effective in ridding corn of both the black or rice weevil and other grain weevils. A mixture of sulphur and salt freely sprinkled upon shucked corn will in a few days drive away weevils under ordinary conditions, but it will not drive out the weevils from corn or peas with the shucks or hulls on.

Other Remedies—There is still quite a number of remedies other than those above described more or less effective, but of no great importance and we will not treat of them here.

BISULPHIDE OF CARBON.

There are several methods of treating such grain as peas, beans, corn, rice and other seeds with bisulphide; one is by applying the bisulphide by means of a long tube or pipe in form of a tight fitting rod. Push one end of this into the center of the pile of grain, pour the bisulphide down the tube, after which it may be withdrawn. If a tight-fitting rod cannot be obtained, a plug can be put into one end of the tube and after this end has pushed down through the grain, the plug can be pushed out with a stick and the liquid can be poured in as in the first instance. The idea in this case is not to place the liquid at the bottom of the pile of grain, however, but about or a little above the center; the liquid

being heavier than the air it will descend and penetrate all parts.

Another method of heating grain with bisulphide of carbon is about as follows: A ball of cotton, which is an excellent material for this purpose, is tied to a rod or stick of such length that it can be pushed through the grain into the center of the vessel containing the grain, first having been well saturated with the bisulphide. A close cover should be immediately placed over the opening to the vessel so as to retain the fumes and prevent their escape. In all of these operations the amount of bisulphide necessary will depend upon the amount of grain and the tightness of the vessel or bin, as the case may be. The quantity with a tight bin or other vessel should be about two ounces to the hundred pounds, or, say at the rate of about one to one and a half pounds per ton. This is an excellent method for the treatment of shelled grain in small quantities as the liquid can be easily applied to the center of the grain pile.

BEST METHOD.

Probably the best method of destroying grain insects with bisulphide of carbon is about as follows: Be it understood that to get the highest results, corn must at least be husked, and should be shelled, and all other grains, such as peas, beans, rice, wheat, oats or other grain, should have the shell or husk removed. Then first construct tight granaries or bins, the tighter the better and place in them the grain to be treated. For every one hundred (100) bushels of grain apply either in small saucers or other receptacles at short distances set about over the surface of the pile of grain, two pounds of bisulphide of carbon to each one hundred bushels of grain or seeds, (100 bushel to 200 bushel bins is a good size), and close up the doors and windows, if any, tight. If corn is treated in the ear it will require about two and a half pounds to the one hundred bushels. Keep the bins closed

for about 72 hours or three days. The bins can then be opened. It is best to repeat the process at the end of about ten days using at the rate of one pound to each ope hundred bushels of grain. Then in about two to three weeks make a third application similar to the second. This is not always necessary, but it makes certain the complete destruction of the insects, for unless at least two applications of the bisulphide are made some of the larvæ will escape and in a short while the trouble will be as bad as ever, but the third application will be enough to make destruction of all the insects sure.

The above method of treatment is adapted to use on any scale however large or small and can be used as easily and successfully by the smallest planter as by the largest warehouse man or dealer. It will succeed with all, provided these instructions are followed properly and proportions observed.

CONSTRUCTION OF BINS.

For the information of those who may desire to construct grain boxes or bins for the purpose above described, we make the following suggestions: A building, box or room about 100 to 200 bushels capacity suitable for the fumigation of a quantity of peas, beans or grain would contain approximately 500 cubic feet of space. A fumigator of this capacity might be built, say, eight feet square by eight feet in height. To make this tight, a good and perhaps the best preventive for the escape of the gas, would be to line the fumigator with sheet tin with soldered joints, or with good wood sheathing, or with both.

Another and perhaps cheaper, and equally as good a method would be to sheath the bin or room inside the walls, ceiling and floors with tarred or heavy building paper, with the joints well lapped, and then cover the inside with matched ceiling boards. The door to the fumigator should be made to fit tight with joints well broken, similar to the door of a refrigerator or safe, and

should be arranged to close against a thick felt weather strip, which should make it practically gas tight. A bin thus constructed would supply enough space to store and fumigate about 200 bushels of seed or grain. This would also allow sufficient space for the application and diffusion of the bisulphide of carbon from top as previously directed in this article with a charge or quantity greater than necessary for the amount of seed to be treated.

It is suggested that on farms, especially, the fumigating building should be isolated, because of the danger attending the use of bisulphide of carbon, its inflammability and liability to affect live stock. In properly constructed buildings or warehouses, cities and towns, complete isolation is not so necessary, as care and protection are more easily and effectively exercised.

CAUTION.

Great care must be exercised in handling or using bisulphide of carbon, as it is of a very explosive nature. No lamps, lighted cigars, pipes, lanterns or matches should be allowed in or near the building until it has been opened long enough to be thoroughly aired. If this is done there will not be the slightest danger in using this remedy. Electric lights can be used without danger. Grain or other seed treated with the bisulphide of carbon is not injured in any way. The germinating power of the seed remains intact, and its edible qualities are in no wise affected. The odor of the bisulphide disappears entirely in a few days.

SUMMARY.

1. The three principal insects injurious to stored grain in the South are the Anguimoid grain moth, the black weevil and the red grain beetle, the bean and pea weevil.
2. The transformations and habits of these insects are

essentially the same, the eggs being laid within the grain both before and after it is gathered, and the mature insects coming forth in about three to six weeks after the eggs are laid.

3. Their depredations are not confined to any one cereal, and by their work they cause a marked decrease in the weight of the grain.

4. Other insects are sometimes found in stored grain, but as a rule in this State, cause little injury.

5. If sulphur or salt is sprinkled in husked corn it will tend to drive the insects away.

6. Many farmers leave an open space in the roof of the corn cribs to allow the rain to soak into the corn, which causes a heating of the grain, during which it is claimed the weevils are killed. This is doubtful.

7. China berries placed in corn seem to have but little effect in keeping the corn free from the black weevils. No value.

8. The best remedy for grain insects is by the use of bisulphide of carbon. For this purpose a "quarantine" bin should be built, and the grain treated with the bisulphide in this bin as it is gathered.

9. The amount of bisulphide will vary with the tightness of the bin; as a rule one ounce of bisulphide to one hundred pounds of grain being sufficient.

10. As the bisulphide is explosive, lights from matches, cigars and the like should be kept away until the odor of the fumes has passed off.

11. The cost of the bisulphide is approximately 20 cents per pound when obtained direct from the manufacturer; possibly less, in quantities of several pounds.

12. Insects in mills should be treated with the bisulphide, commencing the application in the basement and going upward.

13. In the spring the insects in the empty or nearly empty granaries should be killed by means of the bisul-

phide or kerosene, either of which will largely decrease the damage the following fall and winter.

APPENDIX.

On the previous pages we have devoted considerable space to what has so far been demonstrated to be the best methods of controlling insects that do injury to numerous varieties of grain and seeds in this State, but in our search through the Agricultural Departments of a number of States, notably Louisiana, California, Oklahoma, Mississippi and Texas, for information on the subject of insect control, we find that all of these States except Texas, use the bisulphide of carbon treatment. In Texas they use a method peculiarly their own, and claim for it the highest degree of effectiveness. They claim to be using it successfully on a large commercial scale.

With the permission of the Agricultural Department of Texas we are quoting largely their methods as follows:

PEA CURING IN TEXAS

PEA CURING IN TEXAS A SUCCESS.

It is now an established fact that pea curing in Texas is beyond the experimental stage and no man who has taken the time and pains to make personal investigation in the matter will question the solidity of the new enterprise nor doubt the wisdom of progressive men in installing commercial plants and encouraging the planting of peas and similar products for the market.

EQUIPMENT NECESSARY AND APPROXIMATE COST OF INSTALLING.

A well equipped commercial curing plant would consist of the following equipment: A good substantial building with plenty of floor space, which may be used as a ware room for storing peas as well as a place to install

the necessary machinery. The machinery and other equipment would consist of a buller, a cleaner or separator, bins, elevators, ovens or dryers and their auxiliary appliances. Lineshafts, pulleys and belts and the initial power machine, which may be propelled by steam, electricity, gasoline or any other economical power. The approximate cost, ranging from \$1,000.00 to \$5,000.00, depending upon the size and designs of the building, and the kind of material used and the size, amount and quality of machinery installed. It is possible to equip a small plant for even less than \$1,000.00.

WHAT MAY BE PROCESSED AND THE OBJECTS OF TREATING.

In processing peas, beans, corn, maize, kaffir, etc., the object is two-fold. First to kill the corn or pea weevil germ or egg; and, secondly, to extract excessive moisture or water. To prevent the weevils from literally eating up and rendering the peas unwholesome for food and feed, the germs or eggs should be destroyed and it is advisable to remove the unnecessary moisture to prevent heating and spoiling when the peas are bulked in sacks or bins.

METHODS—THEIR SIMPLICITY AND DIFFERENCE.

There are two distinct methods of processing in vogue, but the final results wrought by each process are practically one and the same (killing germs and extracting water), heat being the dual antidote. The greatest difference in the two processes, so far as their practical features are concerned, is found in the method of transmitting the heat from the base of generation to the place of application. In one the air is heated by direct contact with fire and in the other by steam pipes, which may be several feet or yards away from the furnace. The results being so nearly identical and for the sake of brevity I will treat with but one method: the direct contact.

DIRECT CONTACT AND OVEN.

The direct contact method is the operation of an effective, modern oven, which might properly be styled a coffee roaster, in which is kept a gentle, uniform fire just beneath the peas, which are treated in a large revolving, artistically perforated metal drum or cylinder. The cylinder is placed within the oven or furnace and held rigid at right angles with the head and back ends and parallel with the walls of the oven by being mounted upon a spindle-shaft extending lengthwise entirely through and projecting from each end to bearing connections mounted on the outside and at each end of the furnace or oven.

TO KEEP PEAS FROM BURNING.

To keep peas from burning while processing, the fire must not be too hot and the cylinder must be constantly revolving at the rate of about 45 to 50 revolutions per minute, and for this purpose a power pulley is connected with the end of the spindle-shaft mentioned above.

FUELS USED.

Heat for processing may be furnished by the use of any fuel that will make a clear, clean fire, such as coal, coke natural or generated gas. Where gas is used a gas burning device must be provided.

SIZE AND CAPACITY.

These No. 1 roasters, which are a desirable commercial size, are about 26 inches in diameter by 7 feet long and will conveniently hold about 500 pounds of peas at a time. They may be operated singly, in pairs or in batteries consisting of as many as four, six or even eight ovens.

TIME REQUIRED FOR CURING.

The time required to kiln a charge of peas varies from 30 to 45 minutes according to the condition of the peas with reference to ripeness or moisture. Then, too, the temperature of the heat will undoubtedly wield an influence to prolong or shorten the time, according to height and variations.

TEMPERATURE AND ITS EFFECTS ON PEAS AND WEEVILS.

For market purposes and table use it is desirable to cure the peas under a temperature of from 180 to 200 degrees Far. It has been demonstrated by practical men that this range of heat, when carefully applied, does not injure the quality of the peas in food value so far as the market is concerned, but the germinating power for planting purposes, to a great extent, is destroyed. They are said to be perfectly immune from weevils and are guaranteed as such when sold on the market, but after being treated at a temperature that makes them immune from weevils the germs of reproduction, in most cases, are also killed, which renders them unfit for seed purposes.

KEEPING SEED PEAS.

Seed peas should be kept in the hull until planting time and in the meantime should be treated with highlife about every 20 to 30 days from harvest.

COST OF CURING PEAS.

After a curing plant has been installed the cost of processing is normal. A conservative estimate is from 2 to 5 cents per bushel for actual work and expenses, this cost varying, of course, according to the condition of the peas, the arrangement and condition of the building and machinery, and especially the tact and ability of the management. In addition to this cost, however, there will be a shrinkage and waste and processing and handling,

after the peas have been hulled, of about 8%. That means for every 100 pounds of peas hulled there will be a loss in weight of 8 pounds during the process from the huller to the bags. Then taking into account the market value of the peas in theraw state, it is safe to estimate that it will take about 10% of the worth of the peas at \$2.00 per bushel to cover the cost of processing and loss in shrinkage.

MARKET DEMAND FOR CURED PEAS.

There is a good market demand for nicely cured, well assorted table peas and so soon as the trade generally is satisfied that peas immune from weevil can be had from Texas our markets will continue to expand and grow.

WHERE AND BY WHOM PLANTS MAY BE WISELY INSTALLED.

Each community where peas can be successfully grown should have a curing plant. They may be secured by interesting some individual or company in the installment of such a project, or a plant can be built and operated on a co-operative plan, where the growers themselves own the stock and employ a manager to operate the plant and manage the business. In either case the success will depend upon the ability of the manager.

WHERE NECESSARY MACHINERY MAY BE HAD.

For particulars regarding ovens, machinery, etc., write to Jabez Burns & Sons, 600 West 43rd Street, New York, N. Y., and A. T. Ferrell & Co., Saginaw, Mich., for particulars on hullers, cleaners, etc. Both these firms are manufacturers.

CONTROL OF THE VELVET BEAN CATERPILLAR

BY J. R. WATSON.

(Entomologist State Experiment Station.)

The only serious insect enemy of velvet beans in Florida is the caterpillar of the moth, *Anticarsia gemmatilis*, which eats the leaves. The damage from this insect is usually severe and often disastrous. The entire seed crop is sometimes destroyed. Aside from soil improvement, it is chiefly for the seeds, or seeds and pods for winter forage that velvet beans are grown in Florida. They are not generally used as green forage. Since the plant normally produces much of its growth after late August or September, the stripping of the vines at that time curtails the soil-improving effect of the crop as well as its seed production.

The severity of the infestation varies in different years and also in different fields and localities. This is due chiefly to the activities of the insect's natural enemies. In general the severity of injury increases southward, because the insects get an earlier start in the southern part of the State.

The injury is proportional to the size of the field if other conditions are equal. Greater injury occurs in large fields, because the caterpillars become so numerous that their natural enemies (principally birds) cannot control them. In a small field, enemies of the insect come in from the surrounding woods and fields and usually keep them in check.

Fortunately the caterpillars do not appear in disastrous numbers until August or September in the large velvet bean growing sections of the State. In October at least, and often in September, they are brought under complete control by "cholera," a fungus disease. Conse-

quently it is necessary only to supply a little aid to the natural enemies at a critical period.

Few farmers take any measures of control. They trust that the velvet beans will be able to survive and produce some seed in spite of the caterpillars. This bulletin is intended to show that by taking advantage of the food preferences of the caterpillar and of its natural enemies, and by the judicious use of poison, the damage can be reduced to such an extent that velvet beans will be a dependable crop.

Altho it is a serious pest, the velvet bean caterpillar can be controlled at a comparatively low cost. No one needs hesitate to plant velvet beans on account of the ravages of this insect.

LIFE HISTORY OF THE INSECT.

The eggs are small white, roundish bodies which are about one-twelfth of an inch in diameter. The majority of them are laid on the lower surfaces of the mature leaves. The egg hatches in about three days. The young larva is about one-tenth of an inch long. It feeds on the leaves about three weeks, during which it molts (casts its skin) five times and grows to nearly two inches long. After it is half grown it is usually dark green with prominent bright colored lines with darker borders running lengthwise of the body. Many of the caterpillars, however, are pale green and the lines are either indistinct or entirely absent. The line along the side is wider than the others and is often pink or brown. The caterpillar has no conspicuous hairs. If disturbed, it throws itself about violently until it reaches the ground.

When full grown, the caterpillar enters the ground, where it constructs an earthen chamber in which, after a final molt, it passes into the pupa stage. The pupa is brown and three-fourths of an inch long. During September the insect remains in the pupa case about ten days

before emerging as an adult moth. As the weather becomes cooler the time is greatly lengthened, but in no case has the insect been observed to remain in the pupa stage all winter.

The moth, too, is variable in color but is usually some shade of gray or brown. A characteristic mark and one that will enable the farmer to distinguish this moth from any other is the double line that extends diagonally across both wings. The moth is about an inch and a half across the outstretched wings.

MIGRATION AND DISTRIBUTION.

One of our most interesting discoveries concerning this insect is that it is migratory like the moth of the cotton caterpillar. It does not winter in North or Central Florida, but flies north each summer from the southern end of the peninsula or perhaps from Cuba.

The most important practical result of this discovery is that one can predict the coming of the caterpillars. Since the moths are known to appear in a field before the caterpillars, the grower can foretell almost to a day when the caterpillars will begin to damage his crop. He needs only to be able to recognize the moths and to watch for their appearance. Since the eggs hatch in three days, and the caterpillars do little damage until after the second molt, an abundance of moths in a field means that it will be necessary to dust or spray in about twelve days. The grower who finds his field swarming with moths should order his materials at once.

The flight of the moths northward can actually be recorded and predicted in the same manner as the progress of a storm is watched and predicted by the Weather Bureau.

FOOD OF THE CATERPILLAR.

The writer has found the caterpillars feeding on but three plants. In order of the severity of infestation, they

are: velvet beans (*Stizolobium* sp.) kudzu vine (*Pueraria thunbergiana*), and horse beans (*Canavalia* sp.).

Some varieties and species of velvet beans are evidently preferred to others. The Florida velvet bean is always much more severely damaged than the Chinese when the two are planted side by side. On the Experiment Station grounds they frequently occupy neighboring plots, where unusual opportunity is afforded to study the comparative severity of infestation.

The early varieties have usually flowered before the caterpillars become abundant.

Some notes on the comparative amount of damage done to different varieties, or species, of *Stizolobium* when planted side by side, were made September 9, 1913, at the Station Farm. Four varieties, Wakulla, Alachua, Yokohama and Florida, were used in the test. Wakulla is a very early variety, and matures at the same time as the Yokohama, the earliest of the genus. Alachua, another selection from a cross, matures one or two weeks earlier than the Florida. There were three rows of each kind, and they stood in the field in the order given in the following table, which shows the comparative damage to the different varieties:

Variety	Maturing	Damaged by the Caterpillar
Wakulla	Very early	Little
Alachua	Late	Considerably
Yokohama	Very early	Very little
Wakulla	Very early	Little
Florida	Very late	Heavily
Wakulla	Very early	Little
Alachua	Late	Badly
Wakulla	Early	Slightly
Florida	Very late	Very heavily
Wakulla	Very early	Little
Alachua	Late	Badly
Yokohama	Early	Slightly
Wakulla	Very early	Hardly touched

The preceding discussion applies only to those cases where the varieties are grown close together. When a large field containing thirty or forty acres of Chinese

velvet beans is compared with another large field of Florida velvet beans, there is less difference in the damage. Even in this case, however, there is usually a difference in favor of the Chinese.

METHODS OF CONTROL.

EARLY PREPARATION NECESSARY.

1. The farmer should begin to fight this pest at planting time. If Chinese or early Georgia velvet beans are as suitable as the Florida, the main crop can be planted to them or to some of the new early varieties originated at the Experiment Station, such as the Osceola and the Wakulla. Because of early maturity and probably less attractiveness to the moth, these are damaged less severely than the Florida velvet. If the tendency of the Chinese to shell is a serious objection (as when it is used as a cattle food) one of the other kinds, such as the early Georgia, should be planted. As a further protection some of the Florida velvet beans should be planted in the vicinity to attract the moths away from the early varieties. This trap crop should be distributed about the fields so that it will not be too far away (certainly not more than an eighth of a mile) from any part of the main field. The trap crop should be planted in accessible places so that it can be readily sprayed or dusted.

2. A flock of turkeys will consume vast numbers of caterpillars and other insects, especially grasshoppers.

3. Birds, wasps, and skunks should not be molested. All are useful destroyers of insects. Birds and skunks feed on grasshoppers also, which, after the caterpillars, are the most destructive insects in a velvet bean field.

4. A careful watch should be kept for the first moths. The farmer can distinguish this insect from any other common Florida moth by the (usually double) diagonal line which stretches across both wings and turns up to the apex of the fore wing, the appearance of the under

side of the wings, and the peculiar darting flight. These moths may be expected during July in South Florida, during August in Central Florida, and during late August and early September in the extreme northern and western sections of the State. When the moths are noticed in large numbers in the fields, it is probable that the beans will need to be sprayed or dusted after twelve days or two weeks. The presence of moths should, therefore, be a signal to the farmer to obtain spraying materials.

CONTROL BY SPRAYING AND DUSTING.

The application of lead arsenate or zinc arsenite is the best means known for controlling the caterpillar. It will be well to obtain these in the powdered form, because the powder is more uniform in composition than the paste, especially when the paste has lost some of its water. Paris green should not be used on velvet beans, as they are easily burned. A dosage of paris green strong enough to kill a large percentage of the caterpillars is sure to severely damage the vines. Even with the dosage of lead arsenate recommended here, the leaves will be burned sometimes. However, this burning will be confined to old leaves that have almost fulfilled their mission, and no serious damage will result. Contrary to the general rule the young foliage of velvet beans is less easily burned than the old. A young and vigorous leaf is evidently more able to withstand the poison.

Owing to the late appearance of the caterpillar and the almost sure development of "cholera," there is usually not more than a month during which the grower will need to protect his crop. It is not always necessary to treat the entire field. If the most severely infested portion is treated, the birds will congregate on the untreated portion and often hold the caterpillars in check there.

The total cost of spraying at the Station in September, 1915, was \$1.10 an acre, while dusting at the same time

and place cost 80 cents an acre for one application. It has never been necessary to repeat the spray. At least two careful dustings are required for the same protection, which makes the cost 50 cents an acre more than spraying. But in order for spraying to be practical, a good harrel spray-pump and water must be available. It is usually difficult to drive through a velvet bean field with a wagon, although in many cases the grower can leave a road every hundred feet at planting time. The damage done by driving through the vines when they are running over the ground without support is not as great as might be supposed. A week later it will hardly be noticeable.

FORMULAS FOR SPRAYING AND DUSTING.

Not more than twelve ounces of powdered lead arsenate (or a pound and a half of the paste) to fifty gallons of water can be safely used. Even with that small amount one should put a pound and a half of quick-lime (or two quarts of fresh lime-sulphur solution) in the water and should keep the liquid well agitated while spraying.

For a spray we recommend:

Lead arsenate, powder.....	12	ounces
Quick-lime	1½	pounds
Water	50	gallons

If the paste form of lead arsenate is used, take 24 ounces instead of 12. This amount should suffice for nearly an acre.

The dry arsenate when used as a dust should be mixed with about four times its volume of air-slaked lime. A coarse hurlap bag is tied to each end of an eight-foot pole, and filled with the mixture. A man on a mule then takes the pole with the bags and rides across the field, dusting the plants by constantly jarring the pole. At least fifteen pounds of the mixture (three pounds of lead arsenate or zinc arsenate) should be applied to the acre.

DUSTER MORE SATISFACTORY THAN BAGS.

A more even and satisfactory method of spreading the dust is by means of a "blower" or dusting machine. Even a careful man using the bags and pole will cover scarcely more than half of the surface of the leaves and will get the dust too thick in places; our experience has been that with ordinary labor but little more than a third of the leaves are dusted. More time is required to cover the field with a dusting machine, but the added thoroughness more than repays the added cost of labor. A careful man is able to do nearly as thorough work with the duster as he is with a spraying outfit and at a smaller cost.

There are several makes of "knapsack dusters" which cost ten dollars or more. These are best operated by a man on foot who can cover a strip about twenty feet wide by dusting on both sides. If there is any wind, it is better to dust only on the leeward side to avoid inhaling the mixture. It is better to walk across the field in a direction at right angles to the wind. A large acreage will justify the purchase of a dusting machine. Of course with a duster that will throw a sufficient amount one can do more efficient work.

Dusting should be done in the early morning or after a shower, while the vines are wet. The mixtures sticks so well that much of it remains after a heavy rain. It will be necessary to redust every ten days or two weeks, as long as the caterpillars are abundant in order to cover the new growth which will have put out. On the Experiment Station grounds we have never found it necessary to make more than three applications.

If half of the caterpillars can be poisoned their numerous enemies can usually be trusted to destroy a good percentage of those that escape. In fact these enemies are always the real controllers of an outbreak. The farmer with his arsenate only helps them a bit at a critical time.

Except in especially favorably located fields, such as small ones near woods, it will not do to depend entirely upon these enemies. Such a policy may mean the loss of an entire crop, and will usually mean a reduction in yield, which will be much more costly than the application of the insecticide.

After one or two rains it will be perfectly safe to allow stock to eat the poisoned vines. As stock is usually not turned in until the pods are mature, months after the application of the poison, there can be no possible danger of poisoning the animals even if there has been no rain meanwhile. All the leaves which were poisoned will have died and fallen, carrying the poison to the ground where it soon loses its potency. Usually the pods will not have appeared at the time the poison is applied and consequently will carry no poison.

CONTROL BY ENEMIES.

The caterpillars have many natural enemies. One of the most important is the "rice bird," also called "black-bird," or "red-and-buff-shouldered-mars-blackbird." These collect in great flocks in infested fields. Other birds, especially mocking birds, eat many of the caterpillars. It is probably on account of birds alone that small patches of velvet beans planted near woods usually escape with little injury.

Lizards, especially the "chameleon" (*Anolis*), feed eagerly upon the caterpillar. The *Anolis* is commonly seen climbing over the vines in velvet bean fields. They doubtless consume a great number of the caterpillars.

Polecats or skunks are frequently found in the velvet bean fields and probably feed on the caterpillars and pupae, since they are fond of insects. They are among the most useful of wild animals in this respect.

Wasps of certain species carry off many caterpillars with which to stock nests for their grubs.

Perhaps the most important insect enemies of the cat-

erpillars are certain species of predaceous bugs. These bugs are abundant in velvet bean fields, and are commonly seen with caterpillars impaled on their beaks, or slowly and stealthily stalking their prey. Since they attack mostly the smaller caterpillars they do a great deal of good, as they doubtless consume many in a day. Moreover, by destroying the young caterpillars the bugs save more velvet bean leaves than they would if they took the older caterpillars which have already done most of their damage.

A small bluish carabid beetle (*Callida decora*) is active in destroying eggs and young caterpillars. It is frequently seen running actively over the vines.

A number of predaceous enemies also prey upon the pupae in the ground. Common among these are moles and large carabid beetles, says Hunter. The former is seldom seen, but its tunnels are everywhere under the vines. The latter is nocturnal and is found during the day under the dead leaves. It, too, is seldom seen, altho it is common and highly beneficial.

Probably the only practical measure the farmer can take to aid these natural enemies of the caterpillars is to see that they are unmolested. Birds, wasps and skunks, which are commonly persecuted, should be protected. They are among the farmer's best allies. It is true that skunks have an unfortunate appetite for poultry, but poultry can be kept safeguarded at night.

Turkeys are fond of insects of all kinds, and, because they are prone to wander, are particularly valuable on the farm. If possible a farmer should keep a flock for their insectivorous value, even if they do not bring large returns at marketing time.

Dragon flies capture many of the moths.

CONTROL BY CHOLERA.

By far the most efficient check on the increase of this pest is a disease called "Cholera" by farmers. This is

caused by the fungus (*Botrytis Rileyi*). In October, 1914, and again in 1915, and also in previous years, this fungus almost exterminated the caterpillars in the fields around Gainesville. Less than one-tenth of one per cent escaped. On the Experiment Station grounds where they had been numerous enough to destroy much of the crop, the caterpillars became scarce in one week. This is not unusual, but occurs almost every year. Sooner or later the fungus appears and nearly exterminates the caterpillars, though it is often too late to save the crop. After it becomes established in the field, the fungus seems to control the insects for the remainder of the season. The fungus to become epidemic seems to require a cool, prolonged rainy period, such as usually occurs in late September or October.

SUMMARY.

1. This caterpillar is the only serious insect enemy of velvet beans in Florida.
2. The egg hatches in 3 days; the caterpillar grows 3 weeks; the pupa stage lasts two weeks.
3. The insect does not survive the winter. Fields are reinfested each summer, by moths from the south.
4. It has numerous natural enemies which should not be molested.
5. A flock of turkeys helps to control the caterpillars.
6. When early varieties of velvet beans, such as the Chinese, can be grown, a strip around the edges of the field should be sown with the Florida variety as a trap crop.
7. This crop should be sprayed or dusted with lead arsenate every two weeks during the caterpillar season, and when it is necessary the main crop should be similarly treated.
8. Fields should be watched for the first appearance of moths and preparations should be made to spray or dust.

AN INVENTORY OF FLORIDA'S FORESTS AND THE OUTLOOK FOR THE FUTURE

BY ROLAND M. HARPER.

(Formerly with State Geological Survey.)

Summary of Contents.—Area and density of forests—Distribution and character. Frequency of fire in different types—Composition. List of commonest trees—Rate of growth and consumption. Some interesting prophecies which have not come true—Influence of fire, agriculture, etc. Conclusion.

Florida probably has a larger area of forest at the present time than any other State in the Union; for the other eastern States that are about the same size have much more cleared land, and the western States that are considerably larger have vast areas of prairie or desert. Of a total land area of 35,111,040 acres, only 1,805,408, or about 5% is classed as "improved land in farms" by the census of 1910. Adding to the improved land about 6,000,000 acres of Everglades, prairies, marshes, towns and cities, roads, old fields, and farms overlooked by the census enumerators, leaves about 27,000,000 acres of forest.

Of this 17,659,000 acres were owned or controlled by lumbermen on Jan. 1, 1911, according to an exhaustive report on the lumber industry of the United States published by the Bureau of Corporations of the Department of Commerce and Labor in January, 1913. The average stand of merchantable saw timber on this land was 4,200 feet (board measure) per acre. To be on the safe side we may assume that the forests not owned by lumbermen are a little less dense, and put the average for the State at 4,000 feet per acre; which would give a total stand on Jan. 1, 1911, of 108 billion feet.

Distribution and Character of Forests.—Florida, notwithstanding its utter lack of mountains, is one of the most diversified States in the Union, and 25 natural

divisions are easily distinguished. Most of them have been described in the 3d and 6th Annual Reports of the Florida Geological Survey, but a very brief outline of the geography of the State will be given here, for the benefit of prospective investors and homeseekers who may not have those publications.



Fig. 1—Cypress pond in East Florida flatwoods, northeast of Bellamy, Alachua county. The trees are *Taxodium imbricarium* (cypress) and *Pinus Elliottii* (slash pine). July 17, 1909.

The non-tropical hardwoods are most abundant in a belt of red hills and hammocks, 100 to 200 feet above sea-level, parallel to the Gulf Coast in Gadsden, Leon, Jefferson, Madison, Hamilton, Suwannee, Columbia, Alachua and Marion Counties, with outliers in Jackson and Hernando. High pine land, characterized by long-leaf pine and black-jack oak, covers most of West Florida, the lime-sink region from Hamilton County to Hillsborough, and the lake region from Clay to DeSoto. Some of the high pine land is over 200 feet above sea-level, and a few points reach 300. In many places in the lake region and on old dunes along the east coast is a type of

forest peculiar to Florida; known as "scrub," consisting mostly of spruce pine, and small evergreen oaks, on a white sandy soil. The rest of the State is mostly flat pine woods, interspersed with swamps and hammocks. Long-leaf pine is the prevailing tree in the flatwoods north of Osceola County and slash pine (miscalled "Cuban pine" by some writers on forestry) south of there.



Fig. 2—Slash pine bog about six miles south of Tavares, Lake county. Trees all *Pinus Elliottii*. Herbaceous vegetation, mostly *Anchistea Virginica* (a fern); all dead at this time, of course, with nearly all the pinnae dropped off, leaving the stalks. Feb. 20, 1909.

The Everglades in the south cover about 4,000 square miles and are practically treeless. Along the coast there is considerable live oak, cabbage palmetto, and sandy hammock vegetation, with narrow salt marshes in the north and mangrove swamps in the south. Dense hammocks, composed almost entirely of tropical hardwoods, occur in spots along the east coast, especially south of Miami, where frost is almost unknown, and cover nearly the whole of the Keys.

The hardwood forests of northern Florida, like those farther north, are seldom visited by destructive fires. The long-leaf and slash pine forests are subject to frequent fires, formerly started by lightning and now mostly by human agency, which sweep over any one spot about once in two years and tend to keep down the underbrush, but do no harm to mature and sound pines. (If these fires came regularly there would be little chance for the pine to reproduce itself, but in any spot that escapes burning for a few years there is opportunity for a new crop of trees to start, and this need happen only once in the lifetime of a pine to insure the perpetuation of the species.) Fire sweeps through the scrub about once in the lifetime of a spruce pine and kills the trees, as in the spruce forests of the far north, but a new crop soon springs up from seed. The tropical hammocks likewise seem to be subject to destructive fires at long intervals.

Composition of the Forests.—The estimated total number of kinds of trees in Florida depends largely on where the line is drawn between closely related species and between trees and shrubs, but a minimum estimate is 200, which is considerably more than any other State has. Nearly half of these, however, are tropical species which are confined to within a few miles of the coast in South Florida, and make up a very insignificant part of the State's total forest resources.



Fig. 3—Upland hardwood forest on red clay soil derived from limestone, about seven miles northwest of Marianna. Trees mostly *Fagus grandifolia* (beech) and *Quercus Schneckii* (red oak), with a bushy undergrowth of *Cercis* (redbud) and a few oak sprouts. May 11, 1914.

There is an annotated catalogue of 202 native species of trees by A. H. Curtiss of Jacksonville on pages 259-267 of the handbook of Florida published by the State Agricultural Department in 1904 (now out of print). A list of 281 native and cultivated trees of Florida by Dr. John Gifford, of Coconut Grove, was published in 1909 by the State Federation of Women's Clubs.

Dr. John K. Small, of New York, whose work in Florida has been chiefly confined to Dade County, published in the spring of 1913 a little book on the trees of Florida, with descriptions of each, but it is too complete if anything, for it includes quite a number of species which are never anything but shrubs in this State, and some whose occurrence in the State is very doubtful, besides making too fine distinctions between species in some cases. The Quarterly Bulletin of the Agricultural Department of Florida for July, 1913 (vol. 23, No. 3), contains an article on the wood-using industries of Florida, prepared in the office of the U. S. Forest Service by Hu Maxwell, which includes a list of Florida trees with notes on the uses of most of them. (On account of the exhaustion of the supply the same article was reprinted as a supplement to the Bulletin for October, 1914). In the 3d Annual Report of the Florida Geological Survey (pages 314-315) there is a list of trees that grow on peat, and their distribution is given on succeeding pages.

None of the publications just mentioned give an adequate idea of the relative abundance of the trees, except that Maxwell's wood-using report indicates the amounts of the more important species used by manufacturers in the State, which is roughly proportional to their abundance. The report of the Bureau of Corporations pre-

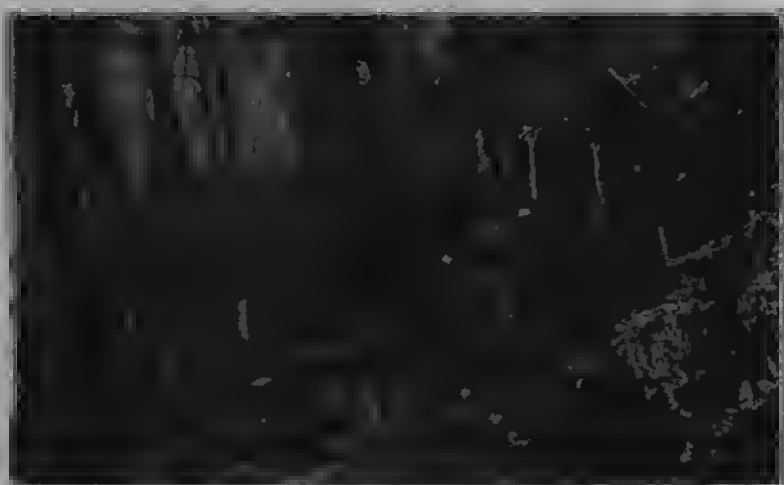


Fig. 4.—Rocky hillside near the Chipola or Long Moss Spring, with hardwood forest composed of *Fagus* (beech), *Celtis* (hackberry), *Ulmus fulva* (slippery elm), *Magnolia grandiflora* (magnolia), and other trees. The rock is limestone. March 10, 1910.

viously referred to divides the standing timber of Florida into four classes, namely, long-leaf pine (which covers two kinds of slash pine also), short-leaf and loblolly pine (probably including also black pine and one or two others), cypress (two species), and hardwoods, and estimates the percentage of each. There is also a separate rough estimate of the more important kinds of hardwoods. In the 6th Annual Report of the State Geological Survey (pp. 400-406) there is a list of over 100 trees of northern Florida, with the estimated percentage of each.

The following list includes the 46 commonest trees of the whole State, arranged in approximate order of abundance, with percentages, based on the estimates just mentioned and the writer's field work in every county in the State. The percentage of course cannot be guaranteed,



Fig. 5—Scene in open pine woods, with no underbrush and "pimply" soil, on a hill near Hinson's (or Douglass) Crossroads, about nine miles west of Vernoh, Washington county, looking toward a similar hill about a quarter of a mile away. (The house is in the saddle between the two hills.) The trees are all long-leaf pine, and the herbaceous vegetation is mostly wire-grass. May 7, 1914.

but possibly there is no one who has studied the forests of the State extensively enough yet to assert that any one figure is wrong. Percentages below 3 are given to the nearest tenth, and no account is taken of species which rank below 0.1% or one thousandth of the total. (This

apparently excludes all the tropical species). The total amount of any species in the State is of course the product of its percentage and the total standing timber.

Technical as well as common names are given, for two or more species may have the same common name, or one species may go by different names in different regions, and a few have no generally accepted common name at all. The general distribution in the State of each species is briefly indicated. (The 6th Annual Report of the State Geological Survey tells just where in northern Florida each species is most abundant, information which ought to be very useful to prospective investors.



Fig. 6—Looking north over hills and river bottoms from near top of Aspalaga Bluff, Gadsden county. This view having been taken in early spring, when the deciduous trees were still leafless, gives an idea of the proportions of evergreens. Most of those in the picture are *Pinus Taeda* (short-leaf pine). The trees in the bottoms are all deciduous. March 7, 1909.

40. Long-leaf pine (*Pinus palustris*). Abundant as far south as Titusville and Punta Gorda, with extreme southern limit in Lee County.

15. Slash pine (*Pinus Caribaea*). The prevailing pine of South Florida, and extending northward along the coasts. Much less valuable than the long-leaf.

7. (Pond) cypress (*Taxodium imbricatum*). Common in Northern Florida, and extending sparingly southward to Dade County.

5. Slash pine (*Pinus Elliottii*). Shallow ponds, branch swamps, etc., from DeSoto County northward. Not usually separated from long-leaf pine in the lumber and naval stores markets.

4. Cypress (*Taxodium distichum*). Mostly in muddy or calcareous swamps, nearly throughout.

3. Cabbage palmetto (*Sabal Palmetto*). In all the counties south of Suwannee, and along the coast to North Carolina on the east, and Bay County on the west.



Fig. 7—Scene about two miles southeast of DeFuniak Springs, Walton county, showing open pine forests, a small branch swamp with *Magnolia glauca* (bay) and *Cyrilla racemiflora* (tyty), and a wet slope with characteristic vegetation in foreground. May 8, 1914.

3. Black-jack oak (*Quercus Catebaei*). High pine land, from DeSoto County northward.

2.5. Short-leaf or loblolly pine (*Pinus Taeda*). Moderately rich soils, from Pasco County northward.

2.3. Black pine (*Pinus serotina*). Sour flatwoods, etc., from Walton County to Osceola.

2.2. Bay (*Magnolia glauca*). Non-alluvial swamps, nearly throughout.

1.7. Spruce pine (*Pinus clausa*). Old dunes along coast, and scrub of the interior.

1.5. Sweet gum (*Liquidambar Styraciflua*). Moderately rich soils, south to DeSoto County.

1.1. Turkey oak (*Quercus cinerea*). Distribution similar to that of *Q. Catebaei*, but apparently preferring slightly more phosphatic soils.

1.0. Short-leaf pine (*Pinus echinata*). Moderately rich uplands, Middle and West Florida, especially around Tallahassee.

1.0. Black gum (*Nyssa biflora*). Shallow ponds and awamps from DeSoto County northward.

0.9. Magnolia (*Magnolia grandiflora*). Hammocks south to DeSoto County.

0.8. Maple (*Acer rubrum*). Swamps, nearly throughout.

0.6. Red oak (*Quercus falcata*). Rich uplands, from Marion County northward.

0.5. Live oak (*Quercus Virginiana*). Hammocks, lake shores, and phosphatic soils, nearly throughout. Commonest in the red hills of Leon County.

0.4. Water oak (*Quercus nigra*). Swamps and bottoms, mostly northward.

0.4. Live oak (*Quercus geminata*). Poorest dry sandy soils.

0.4. Dogwood (*Cornus florida*). Hammocks and rich uplands, from Polk County northward. Commonest in Leon and Wakulla Counties.

0.3. Spruce pine (*Pinus glabra*). Hammocks and rich uplands, from Alachua County northward.

0.3. Water oak (*Quercus laurifolia*). Sandy hammocks, mostly northward.

0.2. Cedar (*Juniperus Virginiana*). Limestone outcrops and low hammocks, south to Brevard and Manatee Counties.

0.2. Hickory (*Hicoria alba*). Rich uplands, south to Marion County.

0.2. Hickory (*Hicoria glabra*). Sandy hammocks, etc., south to St. Lucie County.

0.2. Poplar (*Liriodendron Tulipifera*). Non-alluvial swamps, etc., West and Middle Florida and also in Putnam County.

0.2. Tan bay (*Gordonia Lasianthus*). Bays and non-alluvial swamps, mostly north of DeSoto County and east of the Suwannee River.

0.1. Swamp chestnut oak (*Quercus Michauxii*). Distribution similar to the next.

0.1. Ironwood (*Carpinus Caroliniana*). River-banks, low hammocks, etc., south to Hernando County.

0.1. Beech (*Fagus grandifolia*). Rich woods, Middle and West Florida.

0.1. Elm (*Ulmus Floridana*). Low hammocks, especially in Gulf hammock region.

0.1. Black-jack oak (*Quercus Marylandica*). Dry red clay uplands from Leon County westward.

0.1. Hackberry (*Celtis occidentalis?*). River bottoms, rich hammocks, etc.

0.1. Holy (*Ilex opaca*). Hammocks, etc., mostly northward.

0.1. Red bay (*Persea Borbonia*). Rich hammocks.

0.1. Ash (*Fraxinus Caroliniana*). Swamps, widely distributed.

0.1. Yapon (*Ilex Cassine*). Non-alluvial swamps, mostly eastward.

0.1. Willow (*Salix nigra*). Banks of streams, Middle and West Florida.

0.1. Mulberry (*Morus rubra*). Rich hammocks and bottoms, south to Dade County.

0.1. Lin or basswood (*Tilia pubescens*). Low hammocks, etc., from Leon to Orange and Hernando Counties.

0.1. Tupelo gum (*Nyassa uniflora*). Swamps and sloughs, from Wakulla County to the Choctawhatchee River.

0.1. Juniper (*Chamaecyparis thyoides*). Non alluvial swamps, from Liberty County westward.

0.1. Ash (*Fraxinus Americana*). Rich uplands and hammocks, mostly northward.

0.1. Red bay (*Persea pubescens*). Non-alluvial swamps, widely distributed.

Evergreen make up about 77% of the total, which is a considerably higher figure than in any other Eastern State.

Rate of Growth and Consumption.—Just how fast the forests are growing is an unknown quantity, but the rate of growth of a tree is usually inversely proportional to its longevity, and if the average lifetime of a tree in Florida is 100 years the annual increment, barring accidents and human interference, would be something like 2%, or over two billion feet. In 1910, the latest year for which there are reasonably complete statistics, there were 491 sawmills in Florida, which cut in the preceding year 1,201,734,000 feet of lumber (not counting laths and shingles). Something like 80% of this was long-leaf pine, which forms not over half the total stand, so that it is evident that that species at least is being cut faster than it grows, especially when we take into consideration the large amounts used for shingles, crates, cross-ties, posts, fuel, etc. (which do not figure in the lumber statistics),

wasted in logging and turpentineing, and destroyed in clearing land. But it is not being exhausted nearly as rapidly as was formerly supposed.



Fig. 8.—Dry woods about three miles north of Chalres. Trees mostly *Quercus falcata* (red oak) and *Cornus florida* (dog wood), both in bloom. *Tillandsia usneoides* (Spanish moss) abundant. April 4, 1914.

Some Interesting Prophecies.—Dr. Charles Mohr, of Mobile, an experienced botanist, who was engaged to examine the forests of West Florida for the Tenth Census of the United States in 1880, wrote as follows (10th Census, vol. 9, page 523):

"The well timbered portion of West Florida commences with the southern border of Holmes county. This region is now, however, nearly exhausted along water-courses large enough for rafting. * * * There is scarcely enough left between the Escambia and Choctawhatchee rivers * * * to keep the mills on the coast supplied for another half-dozen years. * * * The exhaustion of the timber-lands throughout the whole breadth of Western Florida, as far as the banks of the Choctawhatchee river, will certainly be accomplished before the end of the next five years." (For more extensive quotations from this report, and comments thereon, see 6th Annual Report Fla. Geological Survey, 1914, pp. 239-240.)

Some years later Dr. Mohr visited Middle Florida, and he wrote as follows about the country along the C. T. & G. (now G. F. & A.) R. R., between Tallahassee and Carrabelle, in *The Forester* (a monthly magazine published in Washington, D. C., now called *American Forestry*) for July, 1898:

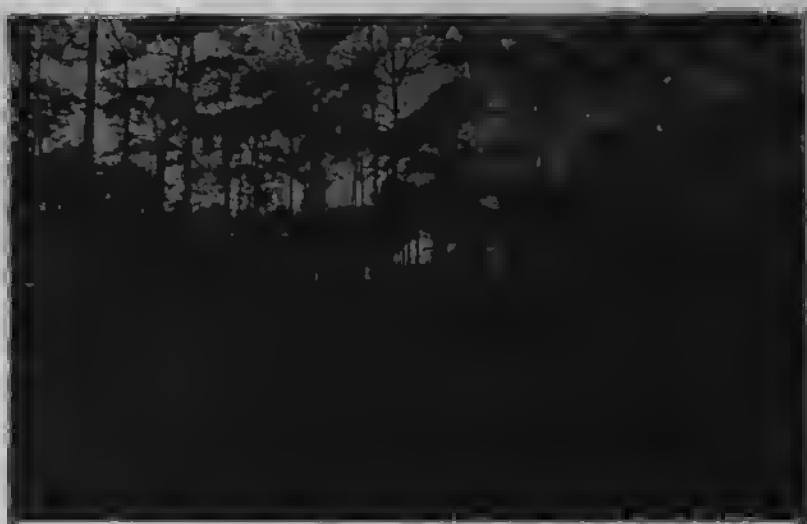


Fig. 9—Marly (?) flatwoods about eight miles southeast of Hampton Springs, Taylor county. Trees mostly *Pinus Elliotti* and *Sabal Palmetto*. March 30, 1910.

"Passing over this road in 1895, shortly after its opening to traffic, there were to be seen several large sawmills in operation along its line; at present they are found dismantled on account of the failure of the timber supply, which, it seems, had fallen far short of estimates. The large complex of these pine lands, embracing about 125,000 acres, is now to be worked solely for its rosin. The turpentine orchards are subjected to the closest management; trees barely of the dimensions to support a box of smallest size and affording a minimum profit in being worked, are bled; the few seed-bearing trees that escape the axe of the logger cannot survive for any length of time the severe treatment inflicted, and the young growth will be totally destroyed by fire by the time the turpentine orchards are abandoned, with no chance left for its reproduction by spontaneous sowing. The fact that

this coast tract will be converted into a desolate wilderness asserts itself in every direction, a destiny which will inevitably be shared by the rest of this plain in its whole extent."

Prof. C. F. Sargent, of Boston, who was (and is) the greatest authority on North American trees, and was the principal author of the Tenth Census report on forests quoted from above, sounded another alarm as to the possible future of the land after lumbering. In an editorial on Florida pines, in *Garden and Forest* for Feb. 17, 1892, he expressed himself as follows:

"A part of the territory * * * will in time degenerate into a wind-swept desert of shifting sand-dunes, which will in time, unless fires can be stopped, gradually spread over the whole territory."

Dr. Mohr's statements were founded on long experience and careful observation in southern Alabama (about which he made similar predictions in the same two publications), and there can be no doubt of his sincerity, but the good old man was evidently unduly alarmed by the rapid destruction he witnessed, and did not make sufficient allowance for the recuperative powers of the long-leaf pine. There is still an abundance of virgin pine timber in West Florida away from the railroads; and in November, 1908, an area of about 735 square miles in Walton and Santa Rosa Counties were withdrawn from homestead entry by the Federal Government, on account of the large amount of unclaimed timber in it, and called the "Choctawhatchee National Forest." (It will be appropriate to state here that in the same month a smaller area in eastern Marion County was set aside by the government as the "Ocala National Forest," and also that there are other forest reservations in Florida that are much older. In 1828 the government appropriated \$10,000 for the purchase of live oak lands along the coast of West Florida so as to insure a supply of that timber, which was then in great demand for ship-building purposes, for the navy; and between 1830 and 1860 208,824 acres were reserved in Florida for that purpose.

including the whole of Santa Rosa Island, and many scattered areas in Middle and West Florida.) The pine forest between Tallahassee and Carrabelle are still far from exhaustion, too. The introduction of the cup-and-gutter method of turpentineing, invented by Dr. C. H. Herty in 1902, has diminished the damage from that source, that Dr. Mohr observed.



Fig. 10.—Flatwoods a few miles west of Wildwood, Sumter county, with long-leaf pine, gallberry and saw palmetto. The largest pines have been cut for timber. (Soil mapped as "Leon sand.") March 10, 1914.

There was even less merit in Prof. Sargen's prediction, for the present writing, nearly a quarter of a century later, there is no sign of any dunes forming in the interior of Florida. Mr. A. H. Curtiss, of Jacksonville, a botanist of note, who reported on the forests of Middle and East Florida for the Tenth Census, took a much more hopeful view of the situation, saying in part as follows, (10th Census, vol. 99, p. 522):

"One of the most important facts in regard to the forests of Florida is their permanence. Owing to the sterility of soil and the liability to inundation of most of the State (!), it is certain that but a very small portion of Florida will ever be cleared of

its forest covering. Taking into consideration the great area covered with valuable pine forests, and the fact that there will be a continuous new growth if the spread of forest fires can be checked, only trees of the largest size being cut, it is evident that Florida will furnish a perpetual supply of the most valuable pine lumber."

Agricultural developments in Florida since that time have been greater than any one would have predicted then, the area of cultivated land having nearly doubled between 1880 and 1910, and it is not quite true that most of the State is liable to inundation, but in other respects Mr. Curtiss was about right. Mr. Hu Maxwell, of Chicago, (formerly with the U. S. Forest Service), expressed similarly optimistic views for the future of the forests in all the Southern States in the big special edition of the Manufacturers' Record for March 27, 1913, which is well worth reading.



Fig. 11—High pine land with scattered oaks, about five miles west of Inverness, Citrus county. The largest oak is a live oak (*Quercus geminata*). (Soil mapped as "Norfolk fine sand.") March 14, 1914.

Influence of Fire and Agriculture on the Permanence of the Forests.—All four of the writers quoted above, seem to have exaggerated the danger from fire. Mr. Max-

well, in his report on the wood-using industries of Florida previously referred to, says:

"Florida appears to be suffering more from forest fires than most of the other Southern States * * * Tree seedlings may come up again, but the fire will follow, and every visitation leaves the ground more barren. No forests will stand fire indefinitely, and Florida's in every part of the State are showing the results of burnings. * * * The habit of frequently burning forest lands perhaps works more harm to long-leaf pine than to any other tree, by killing the young growth."

Fire has undoubtedly destroyed much timber in the North, and almost put an end to the production of white pine in the lower peninsula of Michigan; and northern foresters are almost unanimous in regarding it as the worst enemy of the forests. But conditions are quite different in the long-leaf pine regions of the South, and Mohr and Curtiss, from their long experience in such regions, should have known better; but they were apparently carried away by the exhortations of their northern colleagues. The long-leaf and slash pines and a few other trees have evidently been accustomed to frequent fires for thousands of years, and are practically immune to it after they are a few years old. Furthermore, there is good reason to believe that if fire were prevented absolutely our long-leaf pine forests would in a few generations be replaced by hammocks, as was pointed out by Mrs. Ellen Call Long, of Tallahassee, more than 25 years ago. (If Mr. Maxwell had said "less" instead of "more" in the first and last of the sentences just quoted from him, he would probably have been nearer the truth.) The fact that forest fires are more or less of a necessity in this part of the world was recognized long ago by the Florida Legislature, which in 1879 passed a law fixing the open season for burning the woods at February 15 to March 31, but providing that the commissioners of any county might change these dates at their discretion by giving proper notice. Although the settling up of the country increases the number of fires, it also limits the

area over which each fire can spread, so that the frequency of fire at any one point probably does not increase. (For a fuller discussion of the effects of fire on forests in Florida, see the Sixth Annual Report of the State Geological Survey, 1914, pp. 184, 185, 413, 442; Seventh Annual Report, 1905, pp. 143, 147, 147, 165, 170, 171 and 335.)



Fig. 12—Red oak woods about one and one-half miles east southeast of Ocala. Trees in foreground red oak (*Quercus falcata*), others mostly sweet gum (*Liquidambar*); all deciduous. Locality for soil sample corresponding to chemical analysis No. 2 (mapped as "Gainesville loamy sand.") Feb. 13, 1915.

The worst enemy of our forests at present is the farmer, for field crops and forest trees cannot grow on the same land at the same time, and the cultivated area is rapidly increasing in Florida. However, the complete exhaustion of our timber by this means is probably several centuries off. In the phosphate regions from Alachua to Polk County thousands of acres of long-leaf pine land have been almost completely stripped, to furnish fuel for the phosphate drying kilns (and all of this has taken place since the publication of the Tenth Census report

above quoted), but some of the operators are beginning to use oil instead, and young pines are springing up abundantly in many places.

In fact, wherever the lumber, turpentine and phosphate men have done their worst and departed to new fields, the pines begin to grow again unless the farmer comes immediately after, for there are hardly enough people in Florida yet to keep the forests down. Even when the population is much denser than it is now the rate of cutting may not be increased, for we now have substitutes for wood in almost every industry in which it is used, and the use of these substitutes is constantly increasing, so much the manufacturers of long-leaf pine and cypress lumber in the last few years have tried to stem the tide by advertising their products extensively in newspapers and magazines. Long before all our forests are replaced by cultivated fields we will probably learn to dispense with wood almost entirely, as the Eskimos, Tibetans, Turks, Spaniards, Mexicans and other people living where trees are scarce do now, and the remaining forests will be valued chiefly for their beauty and their influence on climate, stream flow, etc.

THE CULTIVATION OF MELONS, ALSO CUCUMBERS, IN FLORIDA

By H. S. ELLIOT.

Chief Clerk, Department of Agriculture.

The South is the recognized home of the melon family of fruits, as well as numerous closely allied vegetables, and there is no portion of it that will produce better or larger crops than can be grown in our own State. The melon family of plants do best on a rich, sandy loam soil with plenty of warm sunshine and moisture. This kind of soil predominates in Florida, and there is no country in the world that has more sunshine than can

be found in Florida. All kinds of melons are or can be raised very successfully, in nearly all parts of the State. But only in the southern portion can they be grown with real success during the winter months. In the northern and central sections they are planted in the early spring. Make your first plantings in January, February or March and from then until May. If you wish to force the crop, then preparation for a plentiful water supply must be made in time, as large amounts daily will be required to bring success.

PREPARATION OF THE SOIL AND FERTILIZING.

The soil should be deeply plowed at least two ways, and the harrowed two or three times crosswise, the last time with a smoothing harrow. For cantaloupes lay the field off in beds about six feet wide and apply the fertilizer in a continuous line in a furrow run along the center of the beds, using at the rate of about one thousand pounds to the acre. This fertilizer should analyze about as follows: 5% to 7% ammonia; available phosphoric acid, 7% to 9%; potash, 5% to 7%. For water-melons use the same fertilizer, but apply it as you make up the hill, using from two to two and one-half pounds to each hill, mixing well with the soil. It will be impossible to do this work too thoroughly. As soon as the plants of both the melons and the cantaloupes start to run, then make a second application of the fertilizer, using about five hundred pounds to the acre of the same kind, and putting it about one to two feet from the plants which will reach out after it. It is best not to disturb the vines after they start to run, as this is liable to bruise them and lessen the yield. All of this is as suitable for cucumbers as melons.

DIRECTIONS FOR PLANTING.

Plant the cantaloupe seed in a straight row about three or four feet apart along in the middle of the fur-

rows above mentioned, putting about six seed to the hill. When the plants come up and start to growing well, thin them out to two or at most three plants to the hill. For planting the watermelons, lay off your land in checks eight to ten feet each way and plant in the checks. If the land is low, it should be well drained and the seed planted in hills above the level of the field; but if it is medium high land, plant on the level. Put the same number of seed to the hill as you do for cantaloupes, thinning as soon as the plants start to grow. If you wish to have extra early melons and cantaloupes, plant in paper pots, two or three weeks earlier and then at the desired time transplant to the permanent hill.

VARIETIES.

The Florida Favorite and the Tom Watson are the most popular varieties of the watermelons for shipping, although the Duke Jones, the Kolb Gem, Augusta Rattlesnake and the Kleckly Sweet are well liked in some sections. The first named are mostly long melons, while the Jones and Kolb Gem are round. For the home garden and local markets there is no melon that will give better results than can be had from the standard oblong melon. Kleckly Sweet and Augusta Rattlesnake, Florida grown watermelon seeds, give the best results here.

VARIETIES OF CANTALOUPE.

The genuine Rocky Ford cantaloupe is the standard variety planted in most of the trucking sections of the State and makes to perfection. The Emerald Gem is also a fine melon, and succeeds well. There is a new Rocky Ford variety, which should be of special value to the Florida growers. It is known as the rust and blight-resisting Rocky Ford cantaloupe. As its name implies, it is immune to the rust and blight, and as these are the worst enemies of the cantaloupes in Florida, it should make this melon a popular variety with Florida truckers.

as well as for home use and local markets. The Large Late Hackensack, Jenny Lind, and Montreal Market are also fine melons. Nothing but Colorado grown seed should be planted, no matter if you have to pay double the price of seed to be obtained elsewhere, the crop will more than make up for the difference in the quality of the fruit.

CULTIVATION.

Frequent and shallow cultivation with a straight tooth harrow is best where crop is planted in the field, if in the garden, the hoe is the best. It is essential to keep the soil well open to let the warm air and sunshine in. It is also a good idea, when the vines are about one to three feet long to pinch off the ends of the main vine. This makes them put on laterals which form the female flowers, also adds to the vigor of the vines and yield of fruit, and causing them to fruit quicker. If the vines appear to be putting on too many small melons, pinch off some of them, which will make the fruit that you leave larger and better. Do not pinch the ends of the watermelon vines as the main vines are the principal bearers, unlike cantaloupes.

INSECTS AND DISEASES.

The same insects and diseases attack these crops that attack the cucumber, and the remedies advised for the one are equally good for the other. If the plants start to damping off when young, dust them with powdered sulphur. This disease is generally caused by excessive moisture and improper drainage, and if these conditions exist you cannot remedy it, but let it be a warning to you when you plant your next crop, to see that the land is thoroughly drained. The Aphis, cut worm and striped cucumber beetle, are the most formidable insect enemies of the plants. For Aphis (lice) use good tobacco dust prepared for the purpose, applied with a dust sprayer,

both over and on underside of leaves, and for other eating insects, spray with a solution of arsenate of lead and water in the proportion of about one and a half pounds of lead to fifty gallons of water. Should fungus diseases appear, spray often with Bordeaux mixture, say every eight or ten days. This will prevent these troubles, which is much easier than to cure after they get started.

GATHERING AND SHIPPING.

It is best to ship cantaloupes and watermelons just before they are full ripe or as soon as they are matured. Leave a small part of the stem, say an inch, attached to the melon, as they seem to keep better. If it is desirable to remove the stem, the vendor can do this when he offers the fruit for sale to his customers.

Pack the cantaloupes in standard crates, and they may be wrapped if necessary as it is desired. Wrapping is a protection from bruising, and this is a matter that must be guarded against under all circumstances. Watermelons are packed in cars in which common straw, or hay, or pine straw from the woods is used to cover well the bottom and protect the sides and ends of the cars. This must be carefully done to protect the melons from injury while in transit.

The measurement for the standard cantaloupe crate is 12x12x32 inches. Cucumber crates, 8x20x27 inches. Crates for tomatoes, okra, peppers and asparagus must measure 10x11½x22 inches inside measure. Lettuce hampers, 26½x26 inches top and 9 inches at bottom. Hamper baskets for beans and peas, ½-barrel, 14 inches at top, 20 inches high, 9 inches at bottom. Cabbage crates 12x20x36 inches. Celery crates, 8x20x27 inches. Squash and egg-plants, 11½x14x22 inches. All other vegetable crates not mentioned herein, 8x12x22 inches inside measure. Irish potatoes in barrels, standard 11 pecks measurement, also crates, same measurement.

SUGGESTIONS AS TO MARKETING THE CROP.

No matter how fine a crop you produce, unless you make some money out of it, your time and labor have been lost.

The main thing is to put up your melons or vegetables in the best manner possible. Grade them very properly according to size and quality. Pack in standard crates and be sure to have the crates neat. It will be noted that the most successful growers put up their products in a first class manner. It is wise to have a trademark also, for fancy stock, if not for all grades, and mark grade on package; but under no conditions pack anything but extra fancy stock under first grade. If this is done, it will not be long before the grower will have a reputation built upon his brand, and can obtain a good price when other stock not so carefully graded is hardly bringing profitable prices. Poorly packed first class products will rarely pay a profit. It is a good idea to plant enough of one kind of fruit and vegetables to be able to ship in car lots, as if you have good stock and can load a whole car, straight or mixed, you can nearly always dispose of them f. o. b. your station. Which is much more satisfactory than shipping to commission men on consignment. Sell at the station when possible, even though the goods should bring a less price than is offered in the market or otherwise; either delays in route, creating poor condition, or drop in prices, may cause a loss. As above suggested, growers should plant for car lot shipments, if possible; if not, then a number of growers should combine so as to obtain such benefits.

AVOCADO PROPAGATION

By P. H. ROLFS, Director, Agricultural Experiment Station, Gainesville, Florida.

Avocados are easily grown from seed. The seed retain their vitality for several weeks after having been removed

from the fruit. For this reason it has been possible to distribute avocados to all portions of the tropical world. While the seedlings usually produce a rapid growth and generally make excellent trees, only about one out of thirty proves as valuable as huddled varieties. The latter can usually be obtained from nurserymen.

PLANTING OF SEED.

The seed should be planted soon after it is taken from the fruit. One of the most satisfactory ways of propagating avocados is to plant the seed in boxes five inches square and fourteen inches deep. Such a box can be made from cypress shingles and a piece of pine board. The soil used in these boxes should be rich loam. Place the seed in the soil so that it will be covered about an inch, and water daily. When about ten inches tall the plants can be placed in position for budding. Those that are tardy in developing can be given further attention. In time nearly 100% of the seeds will make plants suitable for budding.

The plants may be set out at a season of the year when suitable moisture conditions occur. Less cost for watering will be necessary if they are set during the rainy season. Greater losses will occur if they are set during cool dry weather.

Sometimes it is desirable to plant the seed directly in the field where the tree is to stand. Treatment somewhat similar to that given the seed in the box should be accorded those in the field. To protect the young seedling from sun scalding, it is advisable to place half rotted mulching about them. With careful attention they will grow nearly as rapidly in the field as in seed boxes.

BUDDING.

Almost any of the several methods of budding may be employed. Where both stock and scion are in good con-

dition, shield budding, which is usually employed for citrus, will be found satisfactory. Before the bud is inserted, care should be taken to examine the stock to see that the bark separates smoothly from the wood. In other words, the stock must be growing well. Most people have best success during dry weather.

Bud wood of desirable varieties may be obtained from most trees in large quantity. Usually the scions from which the buds are cut should be about the thickness of an ordinary lead pencil. Choose ripened end branches, and avoid soft-wood and scions in a flush of growth. Buds that have shown a tendency to grow will take readily and be more likely to "spring" than buds which are dormant or have lost their "eye." Where bud wood is scarce the terminal bud from ripened wood may be used and will take as rapidly as the side buds.

CARE OF BUDS.

In budding avocados, as in budding other nursery stock, it is advisable to perform the operation as speedily as is consistent with care. As little time as possible should elapse between opening the bark and cutting the bud from the scion.

Immediately after inserting the bud, wrap carefully. Beginners will find it advisable to use waxed cloth. Wrap the bud firmly but leave an opening for the "eye." The experienced budder will prefer to use wrapping twine. Wrapping twine should be drawn firmly and yet not tight enough to injure the bark during the next week or ten days. The Tent should be as carefully closed as possible.

In a week or two it will be possible to tell whether the bud has taken or not. If the bud has failed, the wrapping may be removed and another attempt made. If the bud has taken it will be advisable to remove some of the wrapping to permit rapid growth of the bud.

As soon as it is definitely known that the bud has taken, the top of the stock may be cut back. The operator

will have to use considerable judgment as to the form this cutting back will take. At times it is sufficient to remove the terminal bud and thus throw growth into the bud. At other times it is advisable to lop the stock by cutting it enough to permit the entire top to be bent over without breaking off. As soon as the bud has made a growth two or three inches long, more of the top may be removed, or, in the case of weak stock, all of the top may be removed. Finally the stock should be cut off close above the bud and smoothed carefully. In most cases it is advisable to cover the wound with some antiseptic or paint.

AVOCADO CULTURE

BY P. H. ROLFS.

The varieties of avocados known as Mexican withstand winter conditions as far north as Gainesville. Protected specimens of the West Indian-Central American types have fruited as far north as Daytona on the East Coast and Pinellas County on the West Coast. The most extensive commercial orchards are being planted in the Biscayne Bay and Caloosahatchee River regions. Seedlings of the favorite kinds are likely to be killed to the ground by frost. Bearing trees are not likely to be killed by a temperature of 25 degrees, unless it is of several hours duration.

The range of soil that may be employed for successful avocado culture is much wider than that for citrus culture. The avocado, however, takes very kindly to the best soils that can be obtained. The best citrus soils will be found to be among the best for avocado. After the site has been chosen, clearing should be done in the usual way. All debris should be removed from the field and the

soil well prepared. It is advisable to plant some cover crop on the portion of the field not occupied by the avocados.

DISTANCE OF PLANTINGS.

The trees may be set in rows 21 feet apart and 21 feet apart in the row for the weaker growing varieties such as the Tropp. For the more vigorous varieties it would be advisable to give greater space. The former distance will give one hundred trees to the acre. If rows are made 30 feet apart, and the trees 21 feet apart in the row for the larger varieties, seventy trees will be required to the acre. If it is desirable to plant out a seedling grove, it will be advisable to make the rows about 30 feet apart and plant the seedlings closer in the row. As a large per cent of the seedlings will be unprofitable, it will then be possible, later, to cut out those that are not desirable.

CULTIVATION.

The cultivation of the avocado grove is essentially the same as that for citrus. Careful cultivation during the dry portion of the year and a cover crop during the summer months are necessary. If the cover crop is not needed as forage, it may be incorporated with the soil and thus provide humus for the grove. Velvet beans will probably give a larger amount of humus than any other crop, and at the same time add a large amount of nitrogen to the soil. Grass crops do not add to the fertility but conserve it.

FERTILIZATION.

The avocado tree is especially partial to nitrogen fertilizer from an organic source. It does not seem to make much difference which of the commercial forms is used. A large amount of potash and phosphoric acid in the formula is beneficial to the trees. In general the fertilizer

formulas for citrus will prove profitable, excepting that organic ammonia should be substituted for the inorganic ammonia.

VARIETIES.

A large number of varieties are being offered by different nurserymen in the State. It is important to select either the earliest varieties or those that ripen late or very late. The mid-season budded varieties must compete with the large mass of seedlings, and for that reason the fruit usually sells low. Baldwin and Early are among the good early varieties. Trapp is good for late, and the various Guatemalan varieties for very late. The earliest fruits in Florida ripen about the first week in July. Then follows in succession until late in October or November when the Trapp begin to mature. The Guatemalan varieties ripen during January and the early spring months.

DIAGRAM FOR PACKING CITRUS FRUITS

The sizer measurements given on the following cuts and the number of fruits marked thereon also are close approximations. Set the sizer, run a few boxes through and pack in order to establish the sizes. Sweet oranges and pomelos should project from $\frac{1}{4}$ inch to $\frac{1}{2}$ inch above the sides of the box before the head is nailed on. Mandarin project less. Lemons and limes are not sized by machinery, but by the eye. Diameters for them vary.

From the grove to the car, at every step handle the fruit with great care. Never pour it from one box or receptacle to another; pick it up in the hands and set it down carefully. Remember that a fall, which will break an egg, will injure a citrus fruit, and one decayed fruit in a box injures all; it destroys the fresh aroma of the fruit and may cause the decay of many fruits.

Cure fruit from two days to a week before packing. Establish two classes of fruit, Brights and Russets; make

two grades of each. Grade closely; do not pack culls. Clean fruit before packing. Use good paper. Pack boxes full; solid and uniform, bottom, top and center all alike. Stencil boxes true to name, quality, number and size. Make packages uniform and true to grade; have them look neat, attractive and inviting. Use every effort to establish a reputation for your fruit. Attention to details pays.

These diagrams are the recognized standards for packing citrus fruits of various kinds.

As a matter of fact, the paneled heads and centre now used in Florida are 1 inch thick. In this case the box should be 27 inches long.

Following is a copy of the law regulating the size and construction of field boxes:

CHAPTER 6950.

AN ACT Regulating the Size and Construction of Boxes for Field Purposes to be Used by Packers of Oranges, Grape Fruit and Lemons in the Purchase of Said Fruit from Growers, and Describing the Size and Construction Thereof, to be Known as the Standard Field Box, and Providing Penalties Therefor.

Be It Enacted by the Legislature of the State of Florida:

Section 1. That all field boxes to be used in the sale of Oranges, Grape fruit and Lemons by grower to Packer or Buyer shall be of uniform size of twelve inches wide, thirteen inches high and thirty-three inches long, and shall contain a middle partition not less than three-fourths of one inch thick.

Sec. 2. Any person, firm or corporation violating the provisions of this Act shall be punished by a fine not exceeding one hundred dollars (\$100.00), or imprisonment not exceeding six months.

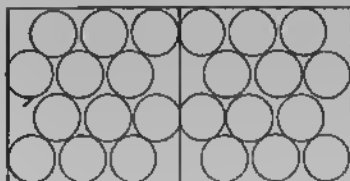
Sec. 3. That all laws and parts of laws inconsistent with the provisions of this Act be and the same are hereby repealed.

Sec. 4. This Act shall take effect upon its passage and approval by the Governor.

Approved June 3rd, 1915.

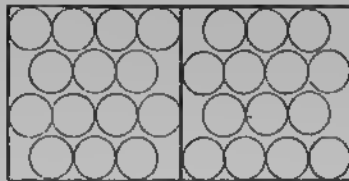
SWEET ORANGES.

No. and Size 86; Dia. 2 1/2 in.; Layers 4.



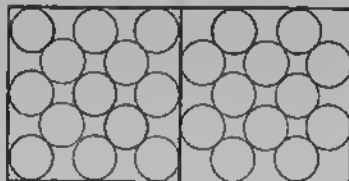
Layers 1 and 3-17; Layers 2 and 4-12

No. and Size 113; Dia. 2 1/4 in.; Layers 4.



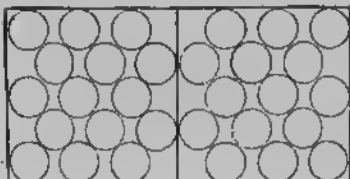
Layers 1 and 3-14; Layers 2 and 4-14.

No. and Size 126; Dia. 2 1/8 in.; Layers 6.



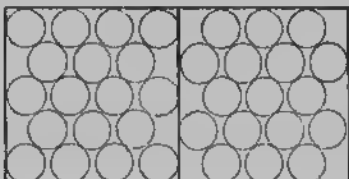
Layers 1, 4 and 5-13; Layers 2 and 4-12.

No. and Size 136; Dia. 2 1/8 in.; Layers 5.



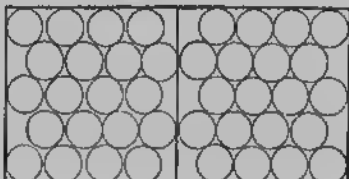
Layers 1, 3 and 5-15; Layers 2 and 4-16.

No. and Size 156; Dia. 2 1/8 in.; Layers 5.



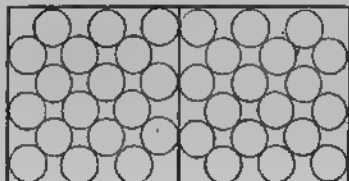
Layers 1, 3 and 5-18; Layers 2 and 4-17.

No. and Size 200; Dia. 2 13/16 in.; Layers 5.



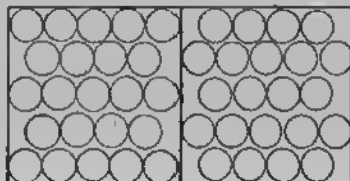
Layers 1, 3 and 5-20; Layers 2 and 4-20.

No. and Size 216; Dia. 2 11/16 in.; Layers 6.



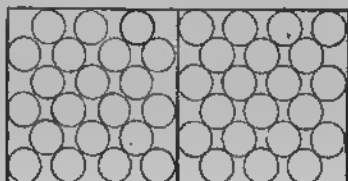
Layers 1, 3 and 5-16; Layers 2, 1 and 5-18.

No. and Size 226; Dia. 2 5/16 in.; Layers 6.



Layers 1, 2 and 5-22; Layers 2 and 4-22.

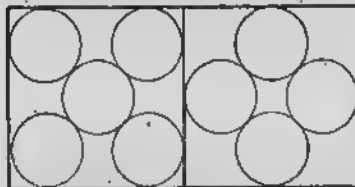
No. and Size 252; Dia. 2 7/16 in.; Layers 8.



Layers 1, 3 and 5-21; Layers 2, 4 and 6-21.

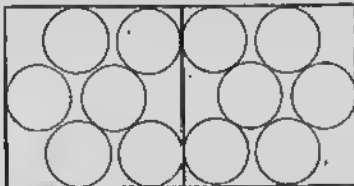
POMELOS.

No. and Size 25; Dia. 5 1/4 in.; Layers 2.



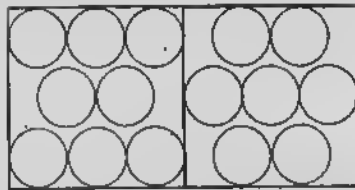
Layers 1 and 2-5; Layer 3-4.

No. and Size 36; Dia. 5 in.; Layers 2.



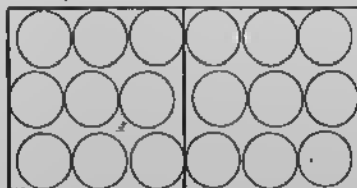
Layers 1 and 2-6; Layers 7-8.

No. and Size 45; Dia. 4 3/4 in.; Layers 2.



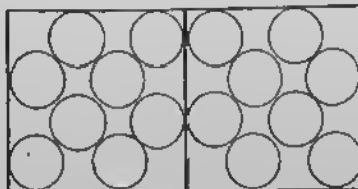
Layers 1 and 2-7; Layers 8-9.

No. and Size 54; Dia. 4 1/2 in.; Layers 2.



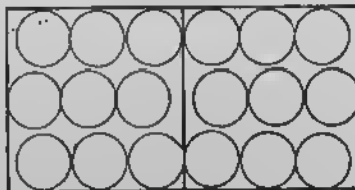
Layers 1 and 2-8; Layers 9-9.

No. and Size 64; Dia. 4 1/4 in.; Layers 4.



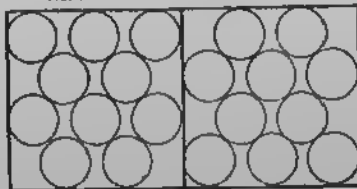
Layers 1 and 2-9; Layers 3 and 4-9.

No. and Size 72; Dia. 4 1/8 in.; Layers 4.



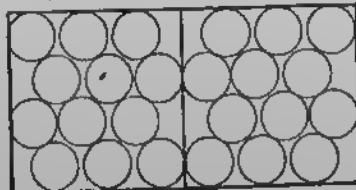
Layers 1 and 2-9; Layers 3 and 4-9.

No. and Size 84; Dia. 4 in.; Layers 4.



Layers 1 and 2-10; Layers 3 and 4-10.

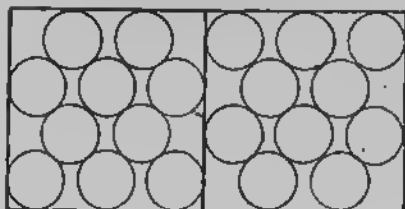
No. and Size 96; Dia. 3 5/8 in.; Layers 4.



Layers 1 and 2-12; Layers 3 and 4-12.

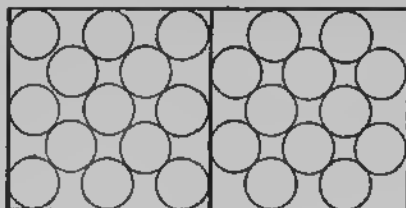
CHINA KING, ETC.

No. and Size 60; Dia. 3 1/2 in.; Layers 3



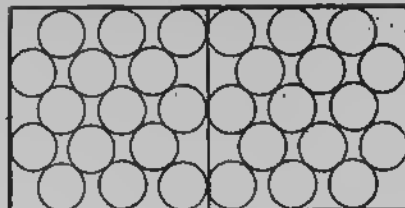
Layers 1 and 3—16; Layer 2—10.

No. and Size 75; Dia. 3 1/4 in.; Layers 3.



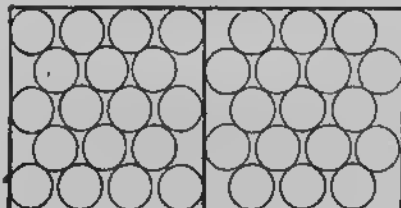
Layers 1 and 3—13; Layer 2—12.

No. and Size 90; Dia. 3 in.; Layers 3.



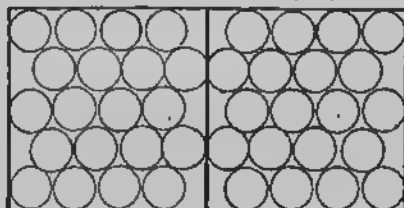
Layer 1 and 3—15; Layer 2—15.

No. and Size 106; Dia. 2 3/4 in.; Layers 3.



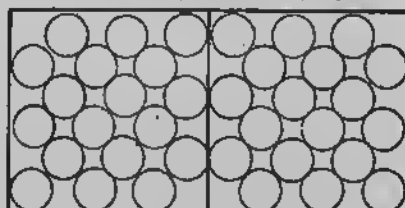
Layers 1 and 3—13; Layer 2—17.

No. and Size 120; Dia. 2 1/2 in.; Layers 3.



Layers 1 and 3—23; Layer 2—20.

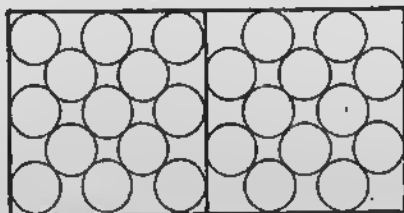
No. and Size 144; Dia. 2 1/4 in.; Layers 4.



Layer 1 and 3—18; Layer 2 and 4—18.

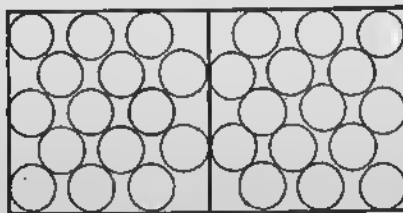
SATSUMA.

No. and Size 70; Dia. 3 1/4 in.; Layers 2.



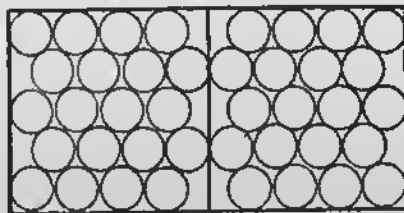
Layers 1 and 3-13; Layer 3-12.

No. and Size 90; Dia. 3 in.; Layers 3.



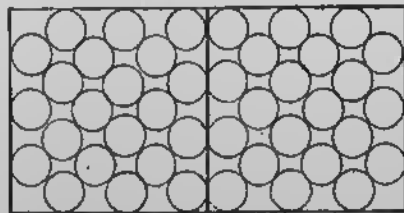
Layers 1 and 3-15; Layer 2-15.

No. and Size 130; Dia. 3 3/4 in.; Layers 2.



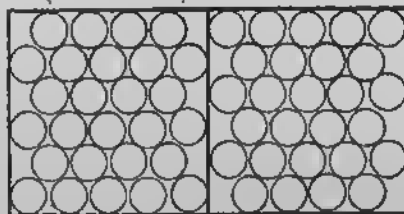
Layers 1 and 3-20; Layer 2-20.

No. and Size 168; Dia. 3 1/2 in.; Layers 4.



Layers 1 and 3-21; Layers 2 and 4-21.

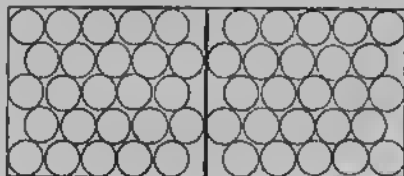
No. and Size 214; Dia. 3 1/4 in.; Layers 4.



Layers 1 and 3-27; Layers 2 and 4-27.

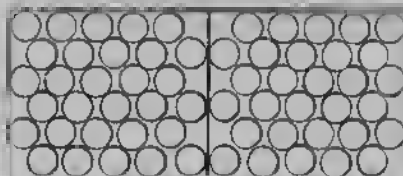
LIMES.

No. and Size 300; Dia. 2 3-8 in.; Layers 6.



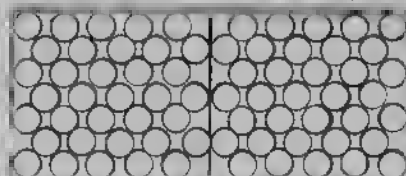
Layers 1, 3 and 5-25; Layers 2, 4 and 6-25.

No. and Size 368; Dia. 2 1-4 in.; Layers 6.



Layers 1, 3 and 5-30; Layers 2, 4 and 6-30.

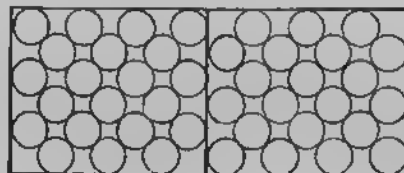
No. and Size 420; Dia. 2 in.-2 1-8 in.; Layers 4.



Layers 1, 3 and 6-35; Layers 2, 4 and 6-35.

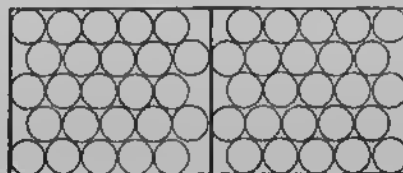
LEMONS.

No. and Size 210; Dia. 2 3-4 in.; Layers



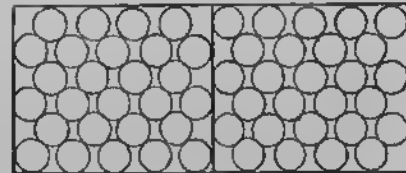
Layers 1, 3 and 5-21; Layers 2 and 4-21.

No. and Size 250; Dia. 2 5-8 in.; Layers 5.



Layers 1, 3 and 5-25; Layers 2 and 4-25.

No. and Size 270; Dia. 2 1-2 in.; Layers 5.



Layers 1, 3 and 5-27; Layers 2 and 4-27.

NURSERIES IN FLORIDA AND THEIR POSTOFFICE ADDRESSES.

Counties.	Owner or Firm Name.	Character of Nursery Stock.	Post Office.
Alachua.....	T. K. Goldby.....	General Stock.....	Waldo
Alachua.....	Henderson Nursery Co.....	General Stock.....	Galvesville
Alachua.....	E. T. Stokes.....	General Stock.....	Campville
Baker.....	Inter State Nursery Co.....	General Nursery Stock.....	McClenny
Baker.....	Turkey Creek Nursery Co.....	General Nursery Stock.....	McClenny, R.F.D. No. 1
Baker.....	Glen St. Mary Nursery Co.....	General Nursery and Floral Stock.....	Glen St. Mary
Brevard.....	Rockdale Nursery Co.....	General and Nursery Stock.....	Titusville
Brevard.....	Royce Nursery Co.....	General Stock.....	Indian River City
Broward.....	Robert J. Reed & Son.....	Citrus and Tropical Stock.....	Fort Lauderdale
Calhoun.....	Rumps Nursery.....	Citrus and General Stock.....	Blountstown
Calhoun.....	Chilpola Nursery.....	Citrus and General Stock.....	Wewahlichka
Citrus.....	S. D. Moon.....	Citrus Nursery.....	Florida City
Clay.....	The Arlington Co.....	Cumpher Tree Nursery.....	Waller
Columbia.....	Dr. F. M. Brown.....	General Nursery Stock.....	Lake City
Dade.....	W. K. Wulton.....	Citrus and Tropical Stock.....	Homestead
Dade.....	W. J. Kronn.....	Citrus and Tropical Stock.....	Homestead
Dade.....	Dun Roberts.....	Citrus and Tropical Stock.....	Homestead
Dade.....	Miami Land & Development Co.....	Citrus and Tropical Stock.....	Florida City
Dade.....	Allison Nursery.....	Citrus and Tropical Stock.....	Redland
Dade.....	Anton Espenback.....	Citrus and Tropical Stock.....	Homestead
Dade.....	A. M. Griffling.....	Citrus and Tropical Stock.....	Miami
Dade.....	Dunn Bros.....	Citrus and Tropical Stock.....	Miami
Dade.....	Miami Tropical Nursery Co.....	Citrus and Tropical Stock.....	Bonn Vista
Dade.....	M. S. Burbank.....	Citrus and Tropical Stock.....	Miami
Dade.....	Dade County Nursery Co.....	Citrus and Tropical Stock.....	Homestead
DeSoto.....	G. S. Hollingsworth.....	Citrus and Tropical Stock.....	Arcadia
DeSoto.....	Clark Brown.....	Citrus and Tropical Stock.....	Arcadia
DeSoto.....	Kates Nursery Co.....	Citrus and Tropical Stock.....	Wachula
DeSoto.....	W. R. Varn.....	Citrus and Tropical Stock.....	Sebring
DeSoto.....	Samuel Durrance.....	Citrus and Tropical Stock.....	Avon Park
Duval.....	H. H. Simmons.....	Pecan Nursery.....	Jacksonville
Duval.....	W. W. Cleveland.....	Pecan Nursery.....	Jacksonville
Duval.....	Mills, The Florist.....	Flowers and Ornamental Trees.....	Jacksonville
Duval.....	Tomlinson & Key.....	Flowers and Ornamental Trees.....	Jacksonville

NURSERIES IN FLORIDA AND THEIR POSTOFFICE ADDRESSES.

Counties.	Owner or Firm Name.	Character of Nursery Stock.	Post Office.
Duval.	Geo. Just.	Flowers and Ornamental Trees.	Jacksonville
Duval.	Riverside Garden.	Flowers and Ornamental Trees.	Jacksonville
Duval.	Grace, The Florist.	Flowers and Ornamental Trees.	Jacksonville
Escambia.	Dr. W. S. Vincent.	General Nursery Stock.	Cottage Hill
Escambia.	Geo. Hules Beck.	General Nursery Stock.	Cottage Hill
Escambia.	Ralph Vorls.	General Nursery Stock.	Cottage Hill
Escambia.	Evington Farm.	General Nursery Stock.	Cantonment
Franklin.	G. W. Hinsey.	General Nursery Stock.	Apalachicola
Hernando.	J. J. Bell.	Citrus and General Nursery Stock.	Brooksville
Hernando.	W. A. Fulton.	Citrus and General Nursery Stock.	Brooksville
Hernando.	E. C. Hale.	Citrus and General Nursery Stock.	Brooksville
Hernando.	H. S. Zeller.	Citrus and General Nursery Stock.	Brooksville
Hernando.	James Mountain.	Citrus and General Nursery Stock.	Trilby
Hernando.	J. W. Kimbrough.	Citrus and General Nursery Stock.	Trilby
Hernando.	J. T. Daniels.	Citrus and General Nursery Stock.	Trilby
Hillsborough.	Buckey Nursery Co.	Citrus and General Nursery Stock.	Tampa
Hillsborough.	W. M. Webb Nursery Co.	Citrus and General Nursery Stock.	West Tampa
Hillsborough.	Sefner Nursery Co.	Citrus and General Nursery Stock.	Sefner
Hillsborough.	Thonotosassa Nursery Co.	Citrus and General Nursery Stock.	Thonotosassa
Hillsborough.	Plant City Nursery Co.	Citrus and General Nursery Stock.	Plant City
Jefferson.	Somult Nursery Co.	Pecan and General Nursery Stock.	Monticello
Jefferson.	S. J. Kluder.	Pecan and General Nursery Stock.	Monticello
Jefferson.	Microsanki Pecan Nursery Co.	Pecan and General Nursery Stock.	Monticello
Jefferson.	Jefferson Co. Pecan & Live Stock Co.	Pecan and General Nursery Stock.	Monticello
Jefferson.	Jefferson Nurseries.	Pecan and General Nursery Stock.	Monticello
Jefferson.	Simpson Nurseries.	Pecan and General Nursery Stock.	Monticello
Jefferson.	Florida Nurseries (W. W. Bassett).	Pecan and General Nursery Stock.	Monticello
Jefferson.	Monticello Pecan Orchard Co.	Pecan and General Nursery Stock.	Monticello
Jefferson.	Bloomfield Nursery & Seed Co.	Pecan and General Nursery Stock.	Monticello
Lake.	Treasure Island Nurseries.	Citrus and General Nursery Stock.	Leesburg
Lake.	Lake High and Nurseries.	Citrus and General Nursery Stock.	Clearmont
Lake.	O. W. Connor Nurseries.	Citrus and General Nursery Stock.	Lake Gem Villa
Lake.	Douglass Nurseries.	Citrus and General Nursery Stock.	Groveland
Lake.	D. C. Hillett Nurseries.	Citrus and General Nursery Stock.	Howey

Lake.....	Sellera & Wilder Nurseries.....	Citrus and General Nursery Stock...	Mt. Dora
Lake.....	Dr. Manser Nurseries.....	Citrus and General Nursery Stock...	Eustis
Leon.....	Radford Nurseries.....	Citrus and General Nursery Stock...	Tallahassee
Manatee.....	Manatee Fruit Co.....	Citrus and General Nursery Stock...	Palmelto
Manatee.....	H. S. Pollard.....	Citrus and General Nursery Stock...	Terra Ceia
Manatee.....	J. C. Powell.....	Citrus and General Nursery Stock...	Terra Ceia
Manatee.....	A. J. Pettigrew.....	Citrus and General Nursery Stock...	Manatee
Manatee.....	Manatee Citrus Co.....	Citrus and General Nursery Stock...	Bradentown
Manatee.....	Reasoner Bros.....	Citrus and General Nursery Stock...	Oceco
Marion.....	E. L. Carney.....	Citrus and General Nursery Stock...	Ocala
Marion.....	E. O. Cordery.....	Citrus and General Nursery Stock...	Lynn
Nassau.....	Brooks Nursery.....	Citrus and General Nursery Stock...	Hilliard
Orange.....	Oklawaha Nurseries.....	Citrus and General Nursery Stock...	Lake Gem
Orange.....	South Apopka Nurseries.....	Citrus and General Nursery Stock...	Ocoee
Orange.....	L. P. Walte.....	Citrus and General Nursery Stock...	Apopka
Orange.....	W. L. Tilden.....	Citrus and General Nursery Stock...	Oakland
Osceola.....	Clifford Brunns.....	Citrus and General Nursery Stock...	Narcooses
Osceola.....	Chas. Monadach.....	Citrus and General Nursery Stock...	St. Cloud
Palm Beach.....	John B. Beach.....	Citrus and General Nursery Stock...	West Palm Beach
Palm Beach.....	C. I. Omer.....	Citrus and Tropical Stock.....	West Palm Beach
Palm Beach.....	H. E. Spencer.....	Citrus and Nursery Stock.....	West Palm Beach
Palm Beach.....	H. C. Belden.....	Citrus and Nursery Stock.....	West Palm Beach
Palm Beach.....	G. W. Idner.....	Citrus and Nursery Stock.....	West Palm Beach
Palm Beach.....	J. Mosher.....	Citrus and Nursery Stock.....	West Palm Beach
Palm Beach.....	Delevan Nursery.....	Citrus and Nursery Stock.....	West Palm Beach
Palm Beach.....	P. Chultz.....	Citrus and Nursery Stock.....	Hohe Sound
Palm Beach.....	H. S. Pennoek.....	Citrus and Nursery Stock.....	Jupiter
Palm Beach.....	C. C. Mast.....	Citrus and Nursery Stock.....	Boynton
Palm Beach.....	Honka Bros.....	Citrus and Nursery Stock.....	Lake Woolb
Palm Beach.....	Patillo Bros.....	Citrus and Nursery Stock.....	Lake Worth
Pasco.....	W. J. Elsworth.....	Citrus and Nursery Stock.....	Bunton
Pasco.....	Eli T. Vaughn.....	Citrus and Nursery Stock.....	Dade City
Pasco.....	J. Q. Ward.....	Citrus and Nursery Stock.....	Zephyrhill
Pasco.....	John Holschelder.....	Citrus and Nursery Stock.....	New Port Richy
Pasco.....	J. M. Mitchell.....	Citrus and Nursery Stock.....	Elfers
Pasco.....	J. C. Campbell.....	Citrus and Nursery Stock.....	Elfers
Pasco.....	Ica Soar.....	Citrus and Nursery Stock.....	Dade City
Pinellas.....	D. R. Keys.....	Citrus and General Nursery Stock...	Clearwater
Pinellas.....	E. D. Pearce.....	Citrus and General Nursery Stock...	Clearwater
Pinellas.....	W. A. Hudson.....	Citrus and General Nursery Stock...	Clearwater

NURSERIES IN FLORIDA AND THEIR POSTOFFICE ADDRESSES.

Counties.	Owner or Firm Name.	Character of Nursery Stock.	Post Office.
Pinellas.....	W. T. Harrison.....	Citrus and General Nursery Stock.....	Clearwater
Pinellas.....	Harvard Killgore.....	Citrus and General Nursery Stock.....	Clearwater
Pinellas.....	W. Y. Douglas.....	Citrus and General Nursery Stock.....	Dunedin
Pinellas.....	P. J. Adriaenssen.....	Citrus and General Nursery Stock.....	Dunedin
Pinellas.....	B. B. Barco.....	Citrus and General Nursery Stock.....	Ozona
Pinellas.....	D. J. Demar.....	Citrus and General Nursery Stock.....	Largo
Pinellas.....	Graham Oldt.....	Citrus and General Nursery Stock.....	Anona
Pinellas.....	H. M. Menares.....	Citrus and General Nursery Stock.....	Anona
Pinellas.....	S. S. Coeckman.....	Citrus and General Nursery Stock.....	Safety Harbor
Pinellas.....	St. George Fechtig.....	Citrus and General Nursery Stock.....	Sutherland
Pinellas.....	H. M. Lovelace.....	Citrus and General Nursery Stock.....	St. Petersburg
Pinellas.....	Royal Ponceanna Nurseries.....	Citrus and General Nursery Stock.....	St. Petersburg
Polk.....	Glen St. Mary Nurseries.....	Citrus and General Nursery Stock.....	Winter Haven
Polk.....	Gillette Nursery Co.....	Citrus and General Nursery Stock.....	Winter Haven
Polk.....	M. L. Varn.....	Citrus and General Nursery Stock.....	Eagle Lake
Polk.....	W. A. Varn.....	Citrus and General Nursery Stock.....	Eagle Lake
Polk.....	Kling Nurseries.....	Citrus and General Nursery Stock.....	Winter Haven
Polk.....	Johnson & Brown.....	Citrus and General Nursery Stock.....	Barrow
Polk.....	J. A. Gassard.....	Citrus and General Nursery Stock.....	Barrow
Polk.....	M. E. Boyd.....	Citrus and General Nursery Stock.....	Eagle Lake
Santa Rosa.....	James Lee.....	General Nursery Stock.....	Avonnie
Santa Rosa.....	W. R. Crowson.....	General Nursery Stock.....	Mulat
Santa Rosa.....	O. C. Stinson.....	General Nursery Stock.....	Bagdad
Santa Rosa.....	C. F. Sneller.....	General Nursery Stock.....	Bagdad
Seminole.....	Gen. D. Hart.....	Citrus and General Stock.....	Sanford
Seminole.....	A. A. Hicks.....	Citrus and General Stock.....	Pinola
Seminole.....	Jacobs Nursery.....	Citrus and General Stock.....	Pinolita
St. Lucie.....	M. M. Miller.....	Citrus and General Stock.....	Sebastian
St. Lucie.....	Axel Holstrom.....	Citrus and General Stock.....	Oso
St. Lucie.....	Conkling Vero Nurseries.....	Citrus and General Stock.....	Vero
St. Lucie.....	R. A. Conkling Nurseries Co.....	Citrus and General Stock.....	Kellamers
St. Lucie.....	N. D. Hansen.....	Citrus and General Stock.....	White City
St. Lucie.....	N. D. Zargensen.....	Citrus and General Stock.....	White City
St. Lucie.....	Peter Hansen.....	Citrus and General Stock.....	White City

Sawannce.....	Rock Hill Nursery.....	General Nursery Stock.....	Welborn
Volusia.....	Glenwood Nurseries.....	Citrus and General Nursery Stock...	Glenwood
Volusia.....	Heyward Nurseries.....	Citrus and General Nursery Stock...	DeLand
Volusia.....	N. F. Lungreen Nurseries.....	Citrus and General Nursery Stock...	DeLand
Volusia.....	S. A. Baker Nurseries.....	Citrus and General Nursery Stock...	Seville
Volusia.....	W. W. Powell Nurseries.....	Citrus and General Nursery Stock...	DeLeon Springs
Volusia.....	Pieraon Nurseries.....	Citrus and General Nursery Stock...	Person
Volusia.....	Rockdale Nurseries.....	Citrus and General Nursery Stock...	Oak Hill
Volusia.....	Lemos Bluff Nurseries.....	Citrus and General Nursery Stock...	Osteen
Volusia.....	Haynes Nurseries.....	Citrus and General Nursery Stock...	DeLeon Springs
Volusia.....	B. Day.....	Citrus and General Nursery Stock...	Oak Hill
Volusia.....	Munro & Stevens.....	Citrus and General Nursery Stock...	Daytona
Volusia.....	Rennoc Grover.....	Citrus and General Nursery Stock...	New Smyrna
Volusia.....	K. F. Prevatt.....	Citrus and General Nursery Stock...	Seville
Wakulla.....	C. J. Ferrell.....	Pecan and General Nursery Stock...	Ben Haden
Wakulla.....	E. C. Ferrell.....	Pecan and General Nursery Stock...	Ben Haden
Wakulla.....	J. L. Moore.....	Pecan and General Nursery Stock...	Ben Haden
Wakulla.....	T. H. McCallister.....	Pecan and General Nursery Stock...	Ben Haden
Wakulla.....	W. H. Harms.....	Pecan and General Nursery Stock...	Sapchoppy
Wakulla.....	C. B. Pigott.....	Pecan and General Nursery Stock...	Arran
Wakulla.....	H. C. Mathew.....	Pecan and General Nursery Stock...	Arran
Wakulla.....	Thom White.....	Pecan and General Nursery Stock...	Arran
Washington.....	D. D. Davis.....	Pecan and General Nursery Stock...	Chipley
Washington.....	J. M. Pender.....	Pecan and General Nursery Stock...	Wausaw

POPULATION STATISTICS

The following Tables of Population are of interest to both rural and urban peoples and will be found of general use. They give the information by Counties. They are taken from the State Census of 1915.

TABLE No. 5—LAND AREA AND POPULATION OF FLORIDA BY COUNTIES, 1915 AND 1910, AND POPULATION PER SQUARE MILE.

COUNTIES.	Land Surface in Sq. Miles.	1915 White.	1915 Negro.	1915 Total.	1910 (U. S.) Total.	Number of Population per Square Mile in State.	Population Outside In- corporated Towns (Rural)	Rural Pop- ulation per Square Mile.
Total for State.....	54,801	559,787	360,304	(1) 921,618	752,619	16.7	513,461	9.8
Alachua	1,283	15,919	19,413	(2) 35,366	34,305	27.5	22,621	17.6
Baker	585	4,263	873	5,136	4,605	8.7	4,708	8.0
*Bay (a)	692	9,340	4,178	13,518	.....	19.5	6,641	9.0
Bradford	522	11,065	4,537	(3) 15,778	14,090	32.1	18,828	25.5
Brevard	1,156	5,142	2,072	(4) 7,270	4,717	0.2	4,069	8.5
*Broward (b)	720	3,110	1,652	(5) 4,763	.....	6.8	1,120	1.5
*Calhoun	1,060	5,135	2,333	7,468	7,405	7.0	6,241	5.8
Citrus	612	2,959	2,270	5,235	6,731	8.5	4,335	7.0
Clay	622	4,305	2,952	(6) 7,315	6,116	11.7	4,087	7.5
Columbia	792	7,710	8,813	(7) 16,524	17,689	20.2	12,602	17.0
Hillsborough	1,075	65,754	8,220	(8) 74,536	11,033	10.3	7,855	3.3
*Dade	2,373	16,241	3,294	(9) 22,104	14,200	5.0	9,945	3.2
DeSoto	3,755	18,823	47,067	(10) 64,834	75,103	115.3	24,392	29.7
Duval	822	47,727	15,220	(11) 62,947	38,029	39.7	17,898	26.8
Escambia	668	25,883	2,642	(12) 5,433	5,201	7.4	1,080	1.5
Franklin	731	2,790	15,006	22,089	22,198	45.9	18,614	37.0
Gadsden	500	7,323	5,028	12,484	11,825	24.5	9,271	18.0
Hamilton	508	8,856	3,007	12,484	4,997	18.4	4,006	10.3
Hernando	476	3,194	17,880	(13) 83,682	78,374	78.0	23,365	12.6
Holmes	435	12,577	1,520	14,097	11,557	32.4	11,587	29.6
Jackson	903	18,501	10,848	(14) 35,351	29,821	36.7	20,830	30.0
Jefferson	593	3,910	12,287	16,197	17,210	29.0	14,157	24.0
Lafayette	1,202	6,437	1,423	7,860	6,710	6.5	6,091	5.0
Lake	1,228	7,933	4,448	12,421	9,509	10.1	8,361	6.8
Lee	4,641	7,195	1,487	(15) 8,684	6,294	2.0	5,204	1.1
Leon	730	5,093	15,038	(16) 20,135	19,427	27.5	14,942	20.5

Levy	1,183	8,192	5,800	11,992	10,361	10.5	10,882	9.2
Liberty	725	2,591*	2,320	4,920	4,700	6.7	4,020	6.7
Manderson	693	7,913	9,019	(17) 17,834	16,910	25.7	16,237	22.0
Mansiee	1,275	11,089	4,010	(18) 15,736	9,550	12.3	7,140	5.6
Marion	1,640	11,805	16,746	(19) 28,758	28,041	17.5	21,024	12.8
Monroe	1,125	14,698	4,909	(20) 19,018	21,563	17.4	1,123	1.0
Nassau	645	5,276	4,726	(21) 10,005	10,525	15.5	6,979	10.8
Orange	655	10,082	5,345	15,397	19,107	16.1	6,193	6.4
Oserola	1,827	0,305	1,632	10,937	5,507	5.9	4,036	2.5
*Palm Beach	2,888	0,499	3,062	(22) 9,009	5,577	8.0	8,410	1.3
Pasco	750	7,187	2,447	9,634	7,502	12.8	6,234	8.8
*Pinellas (c)	234	14,144	4,644	(23) 18,814	.....	80.3	6,009	25.7
Polk	1,907	25,592	11,403	(24) 37,423	24,148	18.9	20,515	10.5
Putnam	772	8,026	7,836	(25) 15,863	13,096	20.4	7,954	10.2
Santa Rosa	1,528	14,634	6,111	20,745	14,897	13.5	19,880	12.6
*Seminole (d)	880	4,956	4,400	(26) 9,458	.....	26.2	4,455	12.4
St. Johns	960	8,149	5,283	(27) 13,473	13,508	14.0	5,500	5.7
St. Lucie	1,260	0,331	2,278	8,589	4,075	6.8	4,787	3.8
Sumter	590	4,934	2,583	7,517	6,696	12.5	5,087	10.0
Suwannee	680	11,815	8,471	(28) 20,286	18,003	29.8	16,240	23.0
Taylor	1,100	6,097	4,643	10,785	7,103	9.8	8,844	8.0
Volusia	1,281	12,050	8,833	(29) 21,790	16,510	17.0	7,892	5.8
Wakulla	601	3,208	4,398	7,006	4,802	12.6	7,456	12.4
*Walton	1,505	12,031	4,442	16,473	16,460	10.9	11,874	7.6
*Washington	652	8,128	2,995	11,123	16,403	17.0	9,552	14.6

* Estimated because of county division.

- (a) Bay county created in 1913 from Washington and Calhoun counties.
 (b) Broward county created in 1915 from Dade and Palm Beach counties.
 (c) Pinellas county created in 1911 from Hillsborough county.
 (d) Seminole county created in 1913 from Orange county. . *

- (1) This total includes 220 persons of other races, 120 Indians and 1,082 State convicts.
 (2) This total includes 2 persons of other races and 33 State convicts.
 (3) This total includes 578 State convicts.
 (4) This total includes 9 persons of other races and 47 State convicts.
 (5) This total includes 1 person of another race.
 (6) This total includes 15 persons of other races and 43 State convicts.
 (7) This total includes 1 person of another race.
 (8) This total includes 1 person of another race and 55 Indians.
 (9) This total includes 1 person of another race and 76 State convicts.
 (10) This total includes 40 persons of other races.
 (11) This total includes 5 persons of other races.
 (12) This total includes 1 person of another race.

- (13) This total includes 48 persons of other races.
 (14) This total includes 2 persons of other races.
 (15) This total includes 2 persons of other races.
 (16) This total includes 4 persons of other races.
 (17) This total includes 2 persons of other races.
 (18) This total includes 1 person of another race and 56 State convicts.
 (19) This total includes 1 person of another race and 146 State convicts.
 (20) This total includes 11 persons of other races.
 (21) This total includes 3 persons of other races.
 (22) This total includes 34 persons of other races and 74 Indians.
 (23) This total includes 4 persons of other races and 22 State convicts.
 (24) This total includes 2 persons of other races.
 (25) This total includes 1 person of another race.
 (26) This total includes 7 persons of other races.
 (27) This total includes 1 person of another race and 40 State convicts.
 (28) This total includes 1 person of another race and 44 State convicts.
 (29) This total includes 7 persons of other races.

TABLE NO. 11—POPULATION, MALE AND FEMALE, BY RACES: 1915.

COUNTIES	Total Population	WHITE			NEGRO		
		Total	Male	Female	Total	Male	Female
Total for State...	*921,618	559,787	291,684	268,103	360,394	187,295	173,099
Alachua	35,332	15,919	8,138	7,781	19,413	9,924	9,489
Baker	5,196	4,203	2,350	2,113	873	480	393
Bay	13,518	9,340	4,790	4,550	4,178	2,309	1,869
Bradford	10,202	11,665	6,012	5,653	4,537	2,375	2,162
Brevard	7,214	6,142	3,788	2,354	2,072	1,115	957
Broward	4,762	3,110	1,701	1,409	1,652	959	693
Calhoun	7,468	5,135	2,708	2,427	2,333	1,329	1,004
Citrus	5,235	2,059	1,510	1,449	2,276	1,227	1,049
Clay	7,257	4,305	2,277	2,028	2,032	1,075	1,277
Columbia	16,023	7,710	3,944	3,766	8,313	4,259	4,054
Dade	24,461	16,241	8,653	7,588	8,220	4,490	3,730
DeSoto	22,177	18,823	10,116	8,707	3,294	1,918	1,376
Duval	94,704	47,727	24,502	23,225	47,067	23,976	23,191
Escambia	41,112	25,883	13,244	12,639	15,220	7,286	7,933
Franklin	5,432	2,790	1,400	1,390	2,642	1,389	1,253
Gadsden	22,989	7,223	3,765	3,558	15,666	7,584	8,082
Hamilton	12,484	6,856	3,518	3,338	5,628	2,814	2,814
Hernando	6,291	3,184	1,691	1,593	3,007	1,613	1,394
Hillsborough	83,634	65,754	34,572	31,182	17,880	9,176	8,704
Holmes	14,097	12,577	6,457	6,120	1,520	879	641
Jackson	35,349	18,501	9,308	9,193	16,948	8,508	8,540
Jefferson	16,197	3,910	2,013	1,897	12,287	6,121	6,166
Lafayette	7,860	6,437	3,449	2,988	1,428	820	594
Lake	12,421	7,933	4,076	3,857	4,468	2,542	1,940
Lee	8,682	7,195	3,925	3,270	1,487	846	641
Leon	20,131	5,093	2,580	2,513	15,038	7,168	7,870
Levy	11,992	6,192	3,295	2,897	5,690	3,257	2,543
Liberty	4,920	2,591	1,371	1,220	2,329	1,290	1,039
Madison	17,832	7,313	3,884	4,029	9,919	4,939	4,980
Manatee	15,679	11,069	5,000	5,169	4,610	2,552	2,058
Marion	28,641	11,865	6,171	5,694	16,740	8,702	8,044
Monroe	10,407	14,698	7,938	6,762	4,909	2,410	2,499
Nassau	10,002	5,276	2,698	2,578	4,726	2,399	2,327
Orange	19,937	10,052	5,076	4,970	5,345	2,750	2,595
Osceola	15,397	9,305	4,861	4,444	1,632	908	724
Palm Beach	9,561	6,499	3,403	3,096	3,062	1,620	1,442
Pasco	6,634	7,187	3,849	3,338	2,447	1,436	1,011
Pinellas	18,788	14,144	7,322	6,822	4,644	2,339	2,305
Polk	37,421	25,952	13,625	12,327	11,469	6,410	5,059
Putnam	15,862	8,026	4,207	3,819	7,833	4,278	3,555
Santa Rosa	20,745	14,634	7,549	7,085	6,111	3,291	2,817
Seminole	9,446	4,956	2,572	2,384	4,490	2,358	2,132
St. Johns	13,432	8,149	4,173	3,976	5,283	2,817	2,466
St. Lucie	8,589	9,331	3,473	2,858	2,258	1,341	917
Sumter	7,517	4,034	2,620	2,314	2,583	1,409	1,174
Suwannee	20,286	11,815	6,050	5,765	8,471	4,203	4,268
Taylor	10,740	6,007	3,293	2,804	4,643	2,871	1,771
Volusia	21,783	12,950	6,629	6,321	8,833	4,778	4,055
Wakulla	7,606	3,208	1,675	1,533	4,398	2,336	2,062
Walton	16,473	12,631	6,247	5,784	4,442	2,360	2,082
Washington	11,123	8,128	4,388	3,740	2,695	1,587	1,408

*The total population of the State is 921,618, composed as follows: White, 559,787; negro, 360,394; persons of other races, 226; Indians, 129, and State convicts, 1,082. Total, 1,437.

Note.—The total population of the counties in this table is the total of the white and negro population, excluding any persons of other races and State convicts, which explains any variation that may be noticed in comparison with other tables.

TABLE NO. 12.—MALES OF VOTING AGE, CLASSIFIED BY RACES—BY COUNTIES—1915, AND TOTALS OF BOTH RACES FOR 1910 (U. S. CENSUS).

COUNTIES.	Total.	White.	Negro.	Total 1910 U. S.
Total for State.....	264,571	160,107	104,404	214,195
Alachua	9,157	4,238	4,919	9,181
Baker	1,174	915	259	1,107
Bay*	4,189	2,720	1,469	.....
Bradford	3,989	2,770	1,199	3,434
Brevard	2,362	1,641	721	1,560
Broward*	1,735	1,074	661	.....
Calhoun	1,856	1,178	678	1,849
Citrus	1,505	825	680	2,272
Clay	2,230	1,163	1,071	1,089
Columbia	3,952	1,974	1,978	4,201
Dade	8,658	5,653	3,003	4,330
DeSoto	6,678	5,499	1,177	4,036
Duval	30,268	15,351	14,917	24,889
Escambia	11,313	7,160	4,153	10,610
Franklin	1,533	752	781	1,631
Gadsden	5,239	1,905	3,334	5,061
Hamilton	3,083	1,733	1,350	2,782
Hernando	2,158	989	1,169	1,552
Hillsborough	25,182	19,120	6,062	24,440
Holmes	3,295	2,805	490	2,643
Jackson	7,092	4,153	3,539	6,461
Jefferson	3,520	1,041	2,479	3,822
Lafayette	2,188	1,640	539	1,744
Lake	3,994	2,448	1,546	2,949
Lee	2,877	2,204	673	2,073
Leon	4,713	1,394	3,319	5,468
Levy	3,576	1,671	1,905	3,011
Liberty	1,303	601	702	1,260
Madison	3,982	1,371	2,111	3,855
Manatee	4,896	3,251	1,645	2,895
Marion	8,123	3,605	4,618	7,618
Monroe	5,005	4,624	1,281	6,452
Nassau	2,754	1,411	1,343	2,661
Orange	4,773	3,154	1,639	5,863
Osceola	3,701	3,124	577	1,812
Palm Beach	3,281	2,212	1,069	2,013
Pasco	3,188	2,242	946	2,430
Pinellas*	6,070	4,625	1,445	.....
Polk	11,853	7,551	3,892	7,822
Putnam	5,182	2,484	2,698	3,961
Santa Rosa	5,521	3,604	1,917	3,947
Seminole*	3,003	1,602	1,401	.....
St. Johns	4,349	2,543	1,806	4,149
St. Lucie	2,938	2,029	909	1,300
Sumter	2,000	1,298	702	1,855
Suwannee	4,572	2,868	1,884	4,236
Taylor	3,810	1,750	2,060	2,223
Volusia	6,977	4,066	2,911	5,160
Wakulla	1,709	748	962	1,185
Walton	4,284	3,003	1,226	4,341
Washington	2,600	1,881	728	4,226

* Cannot be compared, as county has been created since census of 1910.

TABLE NO. 23—PART I—POPULATION OF CITIES OF 5,000 OR MORE.
1915 AND 1910.

CITIES	COUNTIES	1915	White	Negro	Total 1910
Gainesville	Alachua	* 6,738	3,609	3,126	6,735
Jacksonville	Duval	*66,850	30,708	36,085	67,693
Key West	Monroe	*18,485	13,624	4,860	19,945
Lakeland	Polk	* 7,287	4,760	2,527	8,719
Miami	Dade	*15,582	9,918	5,655	5,471
Ocala	Marion	* 5,370	2,717	2,652	4,370
Orlando	Orange	* 6,446	4,056	2,390	3,894
Pensacola	Escambia	*23,219	13,426	9,788	22,982
St. Augustine	St. Johns	5,471	3,533	1,938	5,494
St. Petersburg	Pinellas	* 7,186	4,697	2,289	4,127
Tallahassee	Leon	* 5,193	2,264	2,925	5,016
Tampa	Hillsborough	*48,210	38,210	11,014	37,782
West Tampa	Hillsborough	* 7,837	6,867	967	8,258

TABLE NO. 23—PART II—POPULATION OF CITIES, 2,500 to 5,000:
1915 AND 1910.

CITIES	COUNTIES	1915	White	Negro	Total 1910
Apalachicola	Franklin	* 3,400	1,073	1,726	3,065
Arcadia	DeSoto	* 3,504	2,574	829	1,736
Bartow	Polk	* 3,412	1,904	1,418	2,682
Bradentown	Manatee	* 3,305	2,288	1,088	1,688
Daytona	Volusia	* 4,528	2,033	2,493	3,080
DeLand	Volusia	* 3,490	2,054	1,585	2,812
Fernandina	Nassau	* 3,114	1,158	1,953	3,482
Fort Myers	Lee	* 3,244	2,220	286	2,463
Kissimmee	Osceola	4,221	3,224	998	2,157
Lake City	Columbia	* 3,422	1,793	1,628	5,032
Live Oak	Suwannee	3,204	1,651	1,643	3,450
Palatka	Putnam	* 4,822	2,097	2,524	3,779
Plant City	Hillsborough	* 3,229	2,064	1,144	2,481
Quincy	Gadsden	3,451	1,125	2,326	3,304
Sanford	Seminole	* 4,098	2,494	2,602	3,570
West Palm Beach	Palm Beach	* 4,090	2,307	1,780	1,743

TABLE NO. 23—PART III—POPULATION OF CITIES AND TOWNS OF 1,000
TO 2,500: 1915 AND 1910.

CITIES AND TOWNS	COUNTIES	1915	White	Negro	Total 1910
Alton	Lafayette	1,050	598	457	.....
Bonifay	Holmes	1,107	797	310	922
Brooksville	Hernando	1,385	875	510	879
Chipley	Washington	1,571	1,001	570	1,099
Clearwater	Pinellas	* 1,932	1,199	731	1,171
Dade City	Pasco	1,950	1,336	614	1,068
DeFuniak Springs	Walton	2,142	1,441	701	2,017
East Millville	Bay	1,502	1,122	400	.....
Eustis	Lake	1,148	725	423	910
Fort Meade	Polk	* 2,150	1,542	608	1,165
Fort Pierce	St. Lucie	1,942	1,298	649	1,333
Green Cove Springs	Clay	2,287	1,133	1,154	1,319
High Springs	Alachua	1,265	732	533	1,468
Jasper	Hamilton	1,631	930	701	1,730
Lauderdale	Broward	1,870	1,250	620	.....
Leesburg	Lake	1,380	896	484	991
Lynn Haven	Bay	1,250	1,182	88	.....
Madison	Madison	* 1,763	908	853	1,560
Manatee	Manatee	1,487	724	763	986
Marianna	Jackson	* 2,357	1,172	1,183	1,915
Millon	San Joaquin	1,415	928	487	831
Monticello	Jefferson	2,040	805	1,235	1,629

TABLE NO. 23—PART III—POPULATION OF CITIES AND TOWNS OF 1,000 TO 2,500: 1915 AND 1910.—Continued.

CITIES AND TOWNS	COUNTIES	1915	White	Negro	Total 1910
Mulberry	Polk	1,121	717	403	1,418
New Augatline	St. Johns	1,716	1,032	684	1,586
Newberry	Alachua	1,000	360	640	816
New Smyrna	Volusia	2,012	1,312	699	1,121
Pablo Beach	Duval	1,000	695	300	889
Palmetto	Manatee	1,025	1,051	574	773
Panama City	Bay	2,013	1,461	552	425
Perry	Taylor	1,841	1,119	821	1,012
Port Tampa City	Hillsborough	1,071	500	480	1,843
Punta Gorda	DeSoto	1,772	1,339	433	1,012
St. Andrews	Bay	1,400	1,047	353	875
Sarasota	Manatee	1,682	1,173	508	840
South Jacksonville	Duval	1,622	1,349	172	1,147
Starke	Bradford	1,239	1,014	225	1,135
St. Cloud	Osceola	2,080	2,080	.....	.....
Tarpon Springs	Pinellas	1,038	1,420	516	2,212
Titusville	Brevard	1,310	813	497	868
Wanchula	DeSoto	1,839	1,831	8	1,099
Winter Haven	Polk	1,226	1,110	107	.....
Zephyrhills	Pasco	1,450	1,406	44	423

TABLE NO. 23—PART IV—POPULATION OF CITIES AND TOWNS OF 1,000 AND UNDER: 1915 AND 1910.

CITIES AND TOWNS	COUNTIES	1915	White	Negro	Total 1910
Alachua	Alachua	744	369	375	610
Alford	Jackson	215	185	50	.....
Altha	Calhoun	300	296	4	.....
Anthony	Marion	400	240	160	442
Apopka	Orange	598	295	303	410
Auburndale	Polk	511	427	84	.....
Avon Park	DeSoto	418	394	24	.....
Archer	Alachua	282	225	57	468
Bayview	Brevard	121	121	.....	.....
Baldwin	Duval	570	284	286	.....
Bell	Alachua	250	216	34	243
Bellevue	Marion	182	182	.....	190
Blountstown	Calhoun	027	698	229	546
Bowling Green	DeSoto	670	533	137	422
Bradley	Polk	295	194	101	.....
Brantford	Suwannee	411	217	194	.....
Bunnell	St. Johns	228	.....	.....	.....
Bushnell	Sumter	343	272	71	.....
Callahan	Nassau	483	347	136	.....
Campbellton	Jackson	333	152	181	.....
Carrabelle	Franklin	950	655	295	000
Center Hill	Sumter	495	398	99	299
Citra	Marion	400	215	185	394
Cedar Key	Levy	800	656	244	864
Cocon	Brevard	807	417	390	613
Coleman	Sumter	389	249	140	387
Cottondale	Jackson	392	240	152	.....
Crescent City	Putnam	800	466	343	677
Crystal River	Citrus	900	504	396	663
Cypress	Jackson	289	213	76	.....
Dania	Broward	512	338	174	.....
Daytona Beach	Volusia	582	524	55	831
Deerfield	Broward	370	133	237	.....
Davenport	Polk	167	130	87	.....
DeLeon Springs	Volusia	304	167	137	216
Delray	Palm Beach	839	421	418	.....
Dunnedin	Pinellas	429	358	71	256
Dunedin	Marion	970	431	548	1,227
Eatonville	Orange	122	.....	122	108

TABLE NO. 23.—PART IV.—POPULATION OF CITIES AND TOWNS OF 1,000 AND UNDER: 1915 AND 1910.—Continued.

CITIES AND TOWNS	COUNTIES	1915	White	Negro	Total 1910
Eau Gallie	Brevard	543	500	43	320
Ellenton	Manatee	497	280	207	.....
Eto	Holmes	276	222	54	340
Federal Point	Putnam	279	121	158	147
Fellsmere	St. Lucie	898	689	209	.....
Florida City	Dade	368	307	61	.....
Glendale	Walton	104	104	.....	.....
Graceville	Jackson	731	580	151	734
Greensboro	Gadsden	297	227	70	175
Gretna	Gadsden	181	60	65	201
Greenville	Madison	622	288	334	751
Gulfport	Pinellas	284	281	3	.....
Haines City	Polk	378	246	132	.....
Hallendale	Broward	407	211	196	.....
Hampton	Bradford	349	221	128	265
Haillings	St. Johns	558	.....	.....	308
Havana	Gadsden	480	334	152	432
Hawks Park	Volusia	178	172	1	.....
Hawthorne	Alachua	406	264	232	324
Holly Hill	Volusia	378	365	13	207
Hilliard	Nassau	429	242	187	.....
Homestead	Dade	721	425	296	.....
Interlachen	Putnam	350	147	203	263
Jennings	Hamilton	682	370	312	450
Kathleen	Polk	361	321	40	.....
LaBelle	Lee	240	236	4	.....
Lake Butler	Bradford	832	570	262	655
Lake Helen	Volusia	786	336	450	646
Lake Alfred	Polk	253	134	119	.....
Lakewood	Walton	324	149	175	360
Lake Worth	Palm Beach	612	612	.....	.....
Largo	Pinellas	552	504	48	291
Laurel Hill	Walton	300	288	12	316
Lawtey	Bradford	532	209	233	492
Lee	Madison	212	198	19	.....
Macclenny	Baker	368	296	70	368
Maitland	Orange	145	126	10	157
Malone	Jackson	633	322	311	.....
Mayo	Lafayette	719	498	221	518
Mayport	Duval	500	315	185	441
McIntosh	Marion	206	162	44	.....
Melbourne	Brevard	408	404	4	157
Melrose	(Alachua)	.....	.....	.....	.....
.....	(Putnam)	181	146	45	245
Micanopy	Alachua	617	295	322	613
Millville	Bay	602	464	228	.....
Mt. Dora	Lake	576	403	173	371
Noma	Holmes	832	634	198	806
Oakland	Orange	280	161	89	211
Okeechobee	St. Lucie	982	902	80	.....
Orange City	Volusia	506	185	321	490
Orange Park	Clay	341	156	203	372
Ormond	Volusia	857	411	446	780
Ozona	Pinellas	162	141	11	.....
Pass-a-Grille	Pinellas	109	76	31	.....
Palatka Heights	Putnam	734	415	319	367
Palm Beach	Palm Beach	113	101	12	.....
Paxton	Walton	329	247	112	.....
Pinellas Park	Pinellas	228	179	44	.....
Ponce de Leon	Holmes	295	240	55	.....
Pomona	Putnam	483	214	224	301
Pompano	Broward	484	257	227	269
Port Orange	Volusia	296	269	27	.....
Ralford	Bradford	500	330	170	.....
Reddick	Marion	191	126	65	498
San Mateo	Putnam	327	186	141	110

TABLE NO. 23—PART IV—POPULATION OF CITIES AND TOWNS OF 1,000 AND UNDER: 1915 AND 1910.—Continued.

CITIES AND TOWNS	COUNTIES	1915	White	Negro	Total 1910
Seabreeze	Volusia	443	435	8	368
Sopchoppy	Wakulla	150	147	3	192
Sneada	Jackson	571	837	224	506
Stuart	Palm Beach	599	484	115	.....
Sebring	DeSoto	398	358	42	.....
Taft	Orange	216	68	128	.....
Tavares	Lake	449	370	79	175
Trenton	Alachua	550	300	250	304
Umatilla	Lake	527	527	.....	283
Waldo	Alachua	550	300	250	304
Webster	Sumter	307	250	57	301
Welborn	Suwannee	341	262	79	247
White Springs	Hamilton	900	631	269	1,177
Williston	Levy	800	457	343	371
Wildwood	Sumter	385	276	109	329
Winter Garden	Orange	648	432	216	351
Winter Park	Orange	787	400	387	570
Welaka	Putnam	350	177	173	294
Zolfo	DeSoto	350	284	66	171

*The variation in this total is caused by the addition of persons of another race.

†The enumerator gave only the total population, failing to define the corporate limits, so that the number of each race cannot be stated.

TABLE NO. 24—RURAL AND URBAN POPULATION OF FLORIDA FOR 1915, IN COMPARISON WITH THE CENSUS OF 1905, SHOWING INCREASE BY NUMBER AND PER CENT, BY RACES.

CLASS OF POPULATION.	1915.	1905.	INCREASE	
			Number.	Per Cent.
<i>Rural Population, Total</i>	513,468	380,737	132,724	34.8
White	306,356	211,507	94,759	44.7
Negro	207,105	169,140	37,965	22.4
<i>Urban Population, Total</i>	406,720	232,904	173,816	74.6
White	253,431	139,671	115,760	84.7
Negro	153,289	93,233	60,056	69.2

Note—Comparison could not be made with the United States census of 1910, as in that census all cities and towns of less than 2,500 population were included in the rural population of the State, while in the State census all incorporated cities and towns are classified as urban population.

TABLE No. 26—POPULATION OF CITIES HAVING 5,000 OR MORE IN 1915.
COMPARED WITH POPULATION OF SAME PLACES IN 1905.

CITIES	COUNTY	POPULATION		INCREASE	
		1915	1905	Number	Per Ct.
Gainesville	Alachua	8,736	5,413	1,323	24.4
Jacksonville	Duval	66,850	33,301	31,549	89.4
Key West (a)	Monroe	18,495	20,498	*2,003	*10.8
Lakeland	Polk	7,287	3,299	3,988	120.8
Lake City †	Columbia .....	.....	6,500	.....	.....
Live Oak †	Suwannee .....	.....	7,200	.....	.....
Miami	Dade	15,592	4,733	10,859	208.3
Ocala	Marion	5,370	4,493	877	17.8
Orlando	Orange	6,448	3,511	2,937	83.6
Pensacola	Escambia	23,219	21,505	1,714	7.5
St. Augustine	St. Johns	5,471	5,121	350	6.8
St. Petersburg	Pinellas	7,188	2,316	4,872	210.3
Tallahassee	Leon	5,193	3,311	1,882	56.8
Tampa	Hillsborough	48,160	22,823	25,337	111.0
West Tampa	Hillsborough	7,837	3,661	4,176	114.0

* Decrease.

(a) The decrease in this case was owing mainly to the shifting of foreign population employed in the manufacturing industries and railroad construction.

† Lake City and Live Oak dropped below 5,000 between 1905 and 1915, hence no comparison is made.

TABLE No. 27—POPULATION OF CITIES HAVING 5,000 OR MORE IN 1915.
COMPARED WITH POPULATION OF SAME PLACES IN 1910.

CITIES	COUNTY	POPULATION		INCREASE	
		1915	1910	Number	Per Ct.
Gainesville	Alachua	8,736	6,183	553	8.9
Jacksonville	Duval	66,850	57,699	9,151	15.8
Key West (a)	Monroe	18,495	19,045	*1,450	*7.3
Lakeland	Polk	7,287	3,719	3,568	96.0
Miami	Dade	15,592	5,471	10,121	184.9
Ocala	Marion	5,370	4,370	1,000	22.9
Orlando	Orange	6,448	3,894	2,555	25.6
Pensacola	Escambia	23,219	22,982	237	1.0
St. Augustine	St. Johns	5,471	5,494	*23	.....
St. Petersburg	Pinellas	7,188	4,127	3,059	74.1
Tallahassee	Leon	5,193	5,018	175	3.4
Tampa	Hillsborough	48,160	37,782	10,378	27.5
West Tampa	Hillsborough	7,837	8,258	*421	*5.8

* Decrease.

(a) The decrease in this case was owing mainly to the shifting of foreign population employed in the manufacturing industries and railroad construction.

CROP STATISTICS FOR 1915-16

The attention of the reader is invited to the contents of the pages that follow, and the figures that give expression to the details of the tables giving the statistics of the agricultural, fruit and vegetable production, and also of live stock of all kinds.

ACREAGES.

For the period included for 1913-14 the acreage planted to field crops was 1,081,434, an increase over that of 1911-12, of 144,170 acres actually cultivated. The acreage planted to vegetables and garden products for the same period was 93,413, or an increase of 30,172 acres in actual cultivation, over that of 1911-12, being over 30%.

In 1915-16 the acreage planted to field crops was 1,478,428, showing an increase of 396,994 acres in the area planted to these crops in 1913-14. The acreage planted to vegetable and garden products, however, was only 68,955 or 24,458 acres less than the previous period. An examination of the causes for this discrepancy shows that it is attributed to two causes: first, the scarcity of potash and in many cases the absence of it which disarranged the usual formulas, that growers had been for years accustomed to using; and, second, the extremely high price of commercial fertilizer as fixed by the manufacturers. Whether these prices are necessary or warranted is questionable.

VALUE OF FIELD CROPS.

The value of the standard crops for 1913-14 amounted to \$18,861,389, showing an increase of \$2,809,659 in value over 1911-12, and in favor of 1913-14.

The value of these crops for 1915-16 shows a rather remarkable increase, the figures being \$21,613,300 as compared to \$18,861,389, the difference in favor of 1915-16 over that of 1913-14, being \$2,751,911. This apparently

shows that the reduction in the acreage of vegetable crops in large part went to the production of standard crops, and to that is due in part also the increase in value noted above.

VALUE OF VEGETABLE AND GARDEN PRODUCTS.

The yield in value of these for 1913-14 was \$13,185,904, showing an increase of \$5,129,219 or more than 60% over 1911-12. The value of these products, however, for 1915-16 are short of the previous period by \$2,461,385. The cause of this reduction is explained in the preceding paragraphs.

FRUIT PRODUCTS.

The value of the fruit crops of the State for 1913-14 was \$13,447,435, an increase of \$3,422,272 over that of 1911-12. The value of these products for 1915-16 is \$13,511,950, or an increase of only \$64,515 over 1913-14. The cause for this is that both the output of the crops and the prices obtained for them differed comparatively little in either year period.

VALUE OF LIVE STOCK.

In 1913-14 the value of live stock on hand July 1, 1914, was \$29,541,931. In the period of 1915-16, on July 1, 1916, the value of live stock was \$29,869,842, showing an increase in value over 1913-14 of \$327,911. Undoubtedly this increase in value was held down by the decrease in number of live stock, large numbers being shipped out of the State to the West for beef, thereby keeping the supply depleted.

VALUE OF POULTRY AND PRODUCTS.

The value of poultry and products for 1913-14 was \$4,665,001, and for the period embraced in the year 1915-16 the value is shown as \$4,559,876. Thus there appears a decrease of \$105,125. The only significance to be attached to this occurrence is that the demand has been greater than the supply, a fact that should induce a

greater extension of the industry; it will stand doubling and then fall short 50% of the demand.

VALUE OF DAIRY PRODUCTS.

The value of these products for 1913-14 was \$4,130,925, and the value of these same products for the period of 1915-16 is \$3,881,452 thus showing a loss of \$249,473. This apparent falling may be ascribed to the selling off of many of the cows as beef cattle, one of the very important matters in connection with the sale of cattle, that this Department has repeatedly warned live stock growers not to do. If persisted in, growers cannot and need not expect to meet the demands.

VALUE OF MISCELLANEOUS PRODUCTS.

The value of products included in this schedule being made up of numerous odds and ends, so to speak, varies to a considerable extent. This period covered by 1915-16 the aggregate value of these products amount to \$174,225.

YEAR 1911-12.

Table No. 8—Total Acreage of Crops.

Field Crops, acres	937,264
Vegetable and Garden Products, acres	63,241
Total Acreage in Cultivation	1,000,505

Table No. 9—Total Value of Farm Products.

Table No. 1—Field Crops	\$16,051,730
Table No. 2—Vegetable and Garden Products	8,056,685
Table No. 3—Fruit Products	10,025,163
Table No. 4—Live Stock on Hand	23,510,479
Table No. 5—Poultry and Products	3,527,286
Table No. 6—Dairy Products	2,518,241
Table No. 7—Miscellaneous Products	133,713
Total	\$63,823,297

YEAR 1913-14.

Table No. 8—Total Acreage of Crops.

Field Crops, acres	1,081,434
Vegetable and Garden Products, acres	93,413
Total Acreage in Cultivation	1,174,847

Table No. 9 Total Value of All Farm Products.

Table No. 1—Field Crops	\$18,861,389
Table No. 2—Vegetable and Garden Products	13,185,904
Table No. 3—Fruit Products	13,447,435
Table No. 4—Live Stock on Hand	29,541,931
Table No. 5—Poultry and Products	4,665,001
Table No. 6—Dairy Products	4,130,925
Table No. 7—Apiary Products	104,550
Total	\$83,937,135

YEAR 1915-16.

Table No. 8—Total Acreages of Crops.

Field Crops, acres	\$ 1,478,428
Vegetable and Garden Products, acres	68,955
Total Acreage in Cultivation	\$ 1,547,383

Table No. 9—Total Value of All Farm Products.

Table No. 1—Field Crops	\$21,613,300
Table No. 2—Vegetable and Garden Products	10,724,519
Table No. 3—Fruit Products	13,511,950
Table No. 4—Live Stock on Hand	29,869,842
Table No. 5—Poultry and Products	4,559,876
Table No. 6—Dairy Products	3,881,452
Table No. 7—Miscellaneous Products	174,225
Total Values	\$84,335,164

The following is a list of the County Enumerators, and their post office addresses, who performed the field work in gathering the Agricultural, Horticultural, Live Stock and Industrial Statistics of the several counties. The result of this work is found in the tables that follow.

COUNTY	NAME	POSTOFFICE
1. Alachua	E. G. Spencer	Alachua, Fla.
2. Baker	E. W. Turner	Macclenny, Fla.
3. Bay	C. C. Mathias	Panama City, Fla.
4. Bradford	M. M. Hale	Dukes, Fla.
5. Brevard	E. R. Wager	Titusville, Fla.
6. Broward	J. R. Porter	Davie, Fla.
7. Calhoun	J. R. Hunter	Wewahatchka, Fla.
8. Citrus	W. J. Moon	Floral City, Fla.
9. Clay	W. G. Sikes	Middleburg, Fla.
10. Columbia	J. A. Summerall	Lake City, Fla.
11. Dade	C. K. Cring	Miamt, Fla.
12. DeSoto	R. J. Davis	Limestone, Fla.
13. Duval	Chas. R. Tbebaut	Jacksonville, Fla.
14. Escambia	W. M. J. Scott	Atmore, Ala.
15. Franklin	W. J. Lovett	Apalachicola, Fla.
16. Gadsden	M. E. McCorquodale	Havana, Fla.
17. Hamilton	J. S. Gelger	Jasper, Fla.
18. Hernando	L. R. McKeown	Brooksville, Fla.
19. Hillsborough	Ben L. Blackburn	Tampa, Fla.
20. Holmes	J. W. Baker	Ponce de Leon, Fla.
21. Jackson	T. Walter Padgett	Marlanna, Fla.
22. Jefferson	W. B. Bishop	Andalia, Fla.
23. Lafayette	J. A. Brears	Mayo, Fla.
24. Lake	Charles Smith	Tavares, Fla.
25. Lee	John W. Hendry	Ft. Myers, Fla.
26. Leon	E. L. Billingsly	Tallahassee, Fla.
27. Levy	t. S. C. Sheffield	Bronson, Fla.
28. Liberty	R. H. Weaver	Telogia, Fla.
29. Madison	H. B. Fox	Madison, Fla.
30. Manatee	C. F. McCall	Bradentown, Fla.
31. Marion	N. A. Fort	Lynn, Fla.
32. Monroe	L. F. Roberts	Key West, Fla.
33. Nassau	W. W. Ward	Boulogne, Fla.
34. Okaloosa	W. W. Hurston	Lanrei Hill, Fla.
35. Orange	J. C. Merrill	Plymouth, Fla.
36. Osceola	H. N. Bratton	Kissimmee, Fla.
37. Palm Beach	W. C. C. Branning	West Palm Beach, Fla.
38. Pasco	J. H. Pike	San Antonio, Fla.
39. Pinellas	A. C. Turner	Clearwater, Fla.
40. Polk	J. H. Lancaster	Bartow, Fla.
41. Putnam	Junllen de Nazario	Palatka, Fla.
42. Santa Rosa	H. E. Echola	Jay, Fla.
43. Seminole	Geo. D. Hart	Sanford, Fla.
44. St. Johns	John W. Davis	St. Augustine, Fla.
45. St. Lucie	G. E. Dutton	White City, Fla.
46. Sumter	John R. Wilkerson	Widdowood, Fla.
47. Suwannee	H. E. Carter	Live Oak, Fla.
48. Taylor	Mrs. J. P. Goza	Perry, Fla.
49. Volusia	Otto R. Kirschhoff	DeLand, Fla.
50. Wakulla	Stephen L. Moore	Benhadu, Fla.
51. Walton	A. J. Ward	Bruce, Fla.
52. Washington	A. J. Potter	Caryville, Fla.

LAND AREAS IN FLORIDA BY COUNTIES.

COUNTIES.	Approximate Area in Square Miles.	Approximate Area in Acres.	Acres in Actual Cultivation 1913-14.	Acres in actual Cultivation 1915-16.
Alachua	1,283	807,680	77,644	105,862
Baker	785	375,880	18,090	16,781
*Bay	092	442,880	2,542	1,484
Bradford	522	344,060	43,860	57,867
Brevard	1,158	650,000	576	698
*Broward	720	400,800	.....	5,002
*Calhoun	1,000	762,880	13,775	19,861
Citrus	612	396,800	7,920	18,442
Clay	023	394,880	4,211	4,472
Columbia	792	506,880	58,249	61,302
*Dade	2,373	1,450,720	18,081	10,288
DeSoto	3,755	2,402,560	9,778	12,229
Duval	822	503,040	9,040	5,207
Escambia	608	420,480	16,143	19,652
Franklin	731	346,240	1,209	633
Gadsden	500	345,600	47,726	51,001
Hamilton	508	337,920	37,917	61,100
Hernando	475	318,080	3,175	6,024
Hillsborough	1,075	688,000	10,352	17,245
Holmes	433	293,120	38,468	88,408
Jackson	063	617,600	237,367	234,456
Jefferson	593	374,400	57,001	68,249
Lafayette	1,202	708,160	23,280	80,747
Lake	1,128	670,080	12,335	8,377
Lee	4,641	2,578,840	1,809	1,140
Leon	730	457,600	61,173	87,086
Levy	1,188	731,520	21,294	22,760
Liberty	725	526,720	5,620	5,849
Madison	093	460,160	06,771	71,914
Manatee	1,275	855,680	6,575	7,774
Marion	1,640	1,054,080	39,897	75,622
Monroe	1,125	704,000	892	.....
Nassau	645	403,200	6,414	7,093
*Okaloosa	949	607,360	.....	34,618
*Orange	955	560,600	3,454	7,207
Osceola	1,827	1,134,720	1,684	2,626
*Palm Beach	2,688	1,720,520	3,614	7,587
Pasco	750	490,880	8,300	11,076
*Pinellas	234	149,760	747	2,209
Polk	1,967	1,220,480	6,878	6,770
Putnam	772	481,280	11,092	19,772
Santa Rosa	1,026	658,040	33,813	28,590
*Seminole	360	230,400	3,096	2,960
St. Johns	960	618,240	32,611	26,556
St. Lucie	1,260	802,800	1,622	997
Sumter	590	373,120	26,039	25,978
Suwannee	080	442,880	.....	103,210
Taylor	1,100	680,960	10,048	17,741
Volusia	1,281	803,840	7,619	11,379
Wakulla	601	385,280	13,065	14,833
*Walton	1,058	677,120	31,448	33,543
*Washington	652	469,820	28,626	31,874
Totals	54,240	35,111,040	1,174,847	1,547,363

TABLE No. 1—FIELD CROPS, 1915-16.

COUNTIES	COTTON, UPLAND		
	Acres	Bales	Value
Alachua	103	35	\$ 1,743
Baker	3	1	70
Bay	5	1	50
Bradford	8	3	176
Brevard			
Broward			
Calhoun	1,966	646	29,450
Citrus	9	4	250
Clay	47	22	1,645
Columbia	686	198	9,810
Dade			
DeSoto			
Duval	88	26	2,027
Escambia	1,468	497	24,215
Franklin			
Gadsden	2,111	659	32,725
Hamilton	19,272	4,078	245,390
Hernando	11	10	790
Hillsborough			
Holmes	8,893	1,940	82,480
Jackson	78,847	12,835	741,048
Jefferson	20,089	5,038	273,455
Lafayette	40	13	680
Lake			
Lee			
Leon	23,627	5,471	292,630
Levy	158	44	2,466
Liberty	121	26	1,213
Madison	2,180	508	9,850
Manatee			
Marion	366	108	8,495
Monroe*			
Nassau	122	84	6,348
Okaloosa	1,461	401	19,314
Orange	80	10	800
Osceola			
Palm Beach			
Pasco	2	1	60
Pinellas			
Polk			
Putnam			
Santa Rosa	542	199	10,245
Seminole			
St. Johns			
St. Lucie			
Sumter	56	26	1,960
Suwannee	34	16	1,341
Taylor			
Volusia			
Wakulla	441	143	7,620
Walton	387	79	3,686
Washington	2,157	644	34,597
Totals	163,658	32,782	1,847,542

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	COTTON, SEA ISLAND		
	Acres	Bales	Value
Alachua	25,930	6,101	\$ 425,350
Baker	3,686	1,306	113,378
Bay			
Bradford	12,419	3,554	306,785
Brevard			
Broward			
Calhoun	100	30	2,519
Citrus	62	21	1,116
Clay	116	40	4,225
Columbia	15,914	3,184	296,100
Dade			
DeSoto			
Duval	2	2	150
Escambia	20	8	550
Franklin			
Gadsden	146	30	2,202
Hamilton			
Hernando	1	1	85
Hillsborough			
Holmes			
Jackson	112	25	2,360
Jefferson	799	185	11,885
Lafayette	6,731	1,137	109,661
Lake			
Lee			
Leon	149	33	2,528
Levy	2,982	707	55,035
Liberty			
Madison	21,117	4,300	450,300
Manatee			
Marion	3,810	1,001	135,255
Monroe*			
Nassau	161	91	16,260
Okaloosa			
Orange			
Osceola			
Palm Beach			
Pasco			
Pinellas			
Polk			
Putnam	996	342	34,085
Santa Rosa			
Seminole			
St. John			
St. Lucie			
Sumter	414	106	8,045
Suwannee	32,101	5,581	503,362
Taylor	2,729	561	48,618
Volusia			
Wakulla	3	1	97
Walton			
Washington	19	5	385
Totals	130,528	27,352	\$ 2,528,156

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	CORN		
	Acres	Bushels	Value
Alachua	51,102	625,211	\$ 447,730
Baker	8,634	93,465	93,465
Bay	1,891	12,178	8,472
Brsdford	28,211	281,185	245,811
Brevard	45	1,480	1,430
Broward	194	5,454	4,580
Calhoun	10,673	188,417	131,424
Citrus	7,927	97,413	97,413
Clay	2,536	38,606	37,582
Columbia	26,211	254,682	217,756
Dade	272	3,210	3,480
DeSoto	8,773	93,885	93,885
Duval	2,915	75,434	75,413
Escambia	10,262	132,488	132,488
Franklin	115	4,580	4,580
Gadsden	23,646	406,133	238,471
Hamilton	26,558	252,566	232,565
Hernando	3,752	71,176	84,193
Hillsborough	10,749	173,543	173,164
Holmes	22,680	217,908	217,408
Jackson	106,425	809,580	615,655
Jefferson	30,228	888,267	237,043
Lafayette	14,812	155,098	101,125
Lake	1,312	46,416	46,416
Lee	67	985	985
Leon	49,696	509,124	364,044
Levy	14,603	172,787	172,737
Liberty	3,272	62,160	37,622
Madison	34,819	438,730	320,755
Manatee	1,773	40,060	40,015
Marion	36,254	408,355	338,577
Monroe			
Nassau	3,726	85,217	85,217
Okaloosa	16,680	159,730	120,042
Orange	3,567	65,871	65,871
Osceola	1,162	17,734	17,734
Palm Beach	131	7,552	7,130
Pasco	5,140	74,496	86,245
Pinellas	233	4,240	4,240
Polk	4,379	78,908	81,188
Putnam	9,481	216,369	216,369
Santa Rosa	16,002	211,295	189,914
Seminole	666	15,891	15,860
St. Johns	9,930	120,225	120,225
St. Lucie	20	680	790
Sumter	11,998	163,127	117,633
Suwannee	47,908	426,174	348,338
Taylor	9,579	83,743	54,838
Volusia	4,156	57,091	57,091
Wakulla	11,488	97,886	74,893
Walton	19,570	170,538	170,536
Washington	22,694	209,740	186,060
Totals	752,454	8,285,326	\$ 6,955,038

*Not reported.

TABLE No. 1.—FIELD CROPS, 1915-16—Continued.

COUNTIES	OATS		
	Acres	Bushels	Value
Alachua	1,551	89,710	\$ 23,540
Baker	177	2,550	1,029
Bay	82	440	350
Brauford	835	14,476	14,144
Brevard			
Broward			
Calhoun	670	8,670	5,788
Citrus	180	1,261	1,843
Clay	80	669	622
Columbia	2,628	80,902	23,756
Dade	1	30	30
DeSoto	12	230	235
Duval	28	1,055	992
Escambia	486	7,821	5,510
Franklin			
Gadsden	2,771	42,093	27,823
Hamilton	68	920	460
Hernando	202	4,735	4,675
Hillaborough	87	540	435
Holmes	1,470	21,847	16,010
Jackson	6,388	48,588	82,522
Jefferson	1,227	17,445	11,043
Lafayette	296	2,192	2,127
Lake	53	998	687
Lee	5	185	185
Leon	1,900	25,220	15,455
Levy	391	6,837	6,887
Liberty	219	4,704	8,844
Madison	2,711	29,764	17,117
Manatee	1	26	26
Marion	1,293	17,320	14,302
Monroe*			
Nassau	255	4,555	8,124
Okaloosa	228	3,285	2,110
Orange	21	390	390
Osceola			
Palm Beach			
Pasco	66	903	875
Pinellas			
Polk	50	5,120	2,420
Putnam	54	930	1,080
Santa Rosa	458	6,545	4,659
Seminole	5	200	100
St. Johns	53	680	650
St. Lucie			
Sumter	840	3,742	2,332
Suwannee	1,103	12,870	14,090
Taylor	203	2,750	2,078
Volusia			
Wakulla	194	2,031	2,656
Walton	835	3,520	2,820
Washington	287	3,433	2,400
Totals	29,960	381,189	\$ 272,730

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	SWEET POTATOES		
	Acres	Bushels	Value
Alachua	1,850	260,002	\$ 134,896
Baker	289	89,495	23,868
Bay	223	23,090	16,088
Bradford	1,705	582,720	288,535
Brevard	63	6,625	6,795
Broward	4	265	265
Calhoun	1,573	71,801	35,909
Citrus	1,732	55,708	44,168
Clay	350	45,578	28,081
Columbia	545	71,421	36,144
Dade	270	28,855	29,090
DeSoto	818	60,128	60,128
Duval	1,142	155,246	149,520
Escambia	863	80,506	40,181
Franklin	83	18,000	18,000
Gadsden	1,309	139,688	70,399
Hamilton	775	69,251	49,740
Hernando	247	40,380	40,360
Hillsborough	581	41,383	41,727
Holmes	697	122,532	61,266
Jackson	2,011	175,173	89,788
Jefferson	1,918	103,730	59,822
Lafayette	330	63,263	17,631
Lake	310	17,859	17,859
Lee	144	9,949	9,040
Leon	2,375	199,893	133,918
Levy	533	52,340	26,789
Liberty	254	27,530	18,865
Madison	603	68,930	40,590
Manatee	150	15,549	11,950
Marion	1,483	135,865	98,050
Monroe*			
Nassau	818	147,355	93,947
Okaloosa	749	70,029	35,126
Orange	349	33,582	33,582
Osceola	253	19,717	15,206
Palm Beach	52	6,293	8,559
Pasco	447	40,558	39,240
Pinellas	59	7,655	7,665
Polk	40	1,800	1,800
Putnam	998	199,670	147,087
Santa Rosa	873	101,902	59,672
Seminole	49	4,010	3,700
St. John	821	83,502	41,801
St. Lucie	47	5,222	5,282
Sumter	576	51,931	31,271
Swannee	830	88,948	38,308
Taylor	290	51,295	41,782
Volusia	878	56,280	42,210
Wakulla	217	24,013	15,522
Walton	721	70,184	44,039
Washington	663	46,614	24,872
Totals	33,789	3,859,107	\$ 2,426,397

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	OATS		
	Acres	Bushels	Value
Alachua	1,551	39,710	\$ 23,540
Baker	177	2,550	1,929
Bay	82	440	350
Bradford	835	14,476	14,144
Brevard			
Broward			
Calhoun	670	8,670	5,766
Citrus	130	1,201	1,643
Clay	80	669	622
Columbia	2,629	30,902	23,756
Dade	1	30	30
DeSoto	12	220	235
Duval	26	1,055	982
Escambia	486	7,321	5,510
Franklin			
Gadsden	2,771	42,083	27,823
Hamilton	68	920	460
Hernando	202	4,735	4,675
Hillsborough	37	540	435
Holmes	1,470	21,347	16,010
Jackson	6,388	48,588	32,522
Jefferson	1,237	17,445	11,043
Lafayette	206	2,102	2,127
Lake	53	908	687
Lee	5	185	185
Leon	1,900	25,220	15,455
Levy	891	6,837	6,837
Liberty	219	4,704	3,344
Madison	2,711	29,764	17,117
Manatee	1	26	26
Marion	1,295	17,320	14,302
Monroe*			
Nassau	255	4,555	3,124
Okaloosa	228	3,285	2,110
Orange	21	300	390
Osceola			
Palm Beach			
Pasco	66	905	875
Pinellas			
Polk	56	5,120	2,420
Putnam	54	630	1,030
Santa Rosa	458	6,545	4,650
Seminole	5	200	100
St. Johns	55	650	650
St. Lucie			
Sumter	340	3,742	2,332
Suwannee	1,193	12,370	14,090
Taylor	203	2,750	2,078
Volusia			
Wakulla	194	2,631	2,556
Walton	335	3,520	2,626
Washington	267	3,433	2,406
Totals	29,960	381,185	\$ 272,730

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	SWEET POTATOES		
	Acres	Bushels	Value
Alachua	1,850	260,002	\$ 134,896
Baker	289	39,495	23,866
Bay	223	23,990	16,988
Bradford	1,705	582,720	288,535
Brevard	63	8,625	6,795
Broward	4	265	265
Calhoun	1,573	71,801	35,990
Citrus	1,732	55,708	44,168
Clay	380	45,575	26,081
Columbia	545	71,421	36,144
Dade	270	28,855	29,090
DeSoto	816	60,128	60,128
Duval	1,142	155,246	149,520
Escambia	863	80,506	40,181
Franklin	83	18,000	16,000
Gadsden	1,309	139,688	70,399
Hamilton	775	69,251	49,740
Hernando	247	40,360	40,360
Hillsborough	581	41,363	41,737
Holmes	697	122,532	61,166
Jackson	2,911	175,173	89,788
Jefferson	1,618	103,739	59,822
Lafayette	390	33,263	17,031
Lake	310	17,879	17,659
Lee	144	9,940	9,940
Leon	2,375	199,833	133,916
Levy	533	52,340	25,789
Liberty	254	27,530	18,865
Madison	603	68,930	40,590
Manatee	150	15,540	11,950
Marion	1,483	135,895	98,050
Monroe*			
Nassau	818	147,355	93,947
Okaloosa	749	70,029	35,128
Orange	349	33,582	33,552
Osceola	253	19,717	15,206
Palm Beach	52	8,293	8,559
Pasco	447	40,558	39,240
Pinellas	59	7,665	7,605
Polk	40	1,800	1,800
Putnam	996	196,670	147,087
Santa Rosa	873	101,902	59,872
Seminole	49	4,010	3,700
St. Johns	821	83,502	41,801
St. Lucie	47	5,222	5,282
Sumter	576	51,931	31,271
Suwannee	830	88,948	38,306
Taylor	290	51,295	41,782
Volusia	678	50,280	42,210
Wakulla	217	24,013	15,522
Walton	721	70,134	44,039
Washington	666	46,614	24,872
Totals.....	33,789	3,859,107	\$ 2,426,307

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	RICE		
	Acres	Bushels	Vaine
Alachua			
Baker	3	53	\$ 92
Bay			
Bradford	36	805	1,575
Brevard	1	25	50
Broward			
Calhoun	63	1,089	1,572
Citrus	3	58	141
Clay	9	116	321
Columbia	46	765	765
Dade			
DeSoto	34	1,180	1,850
Duval	10	485	758
Escambia	22	506	506
Franklin			
Gadsden	9	148	234
Hamilton	12	145	145
Harbando	84	2,688	4,890
Hillsborough	58	1,650	3,580
Holmes	128	8,437	8,437
Jackson			
Jefferson			
Lafayette	10	150	246
Lake			
Lee	7	250	500
Leon	3	37	109
Levy	14	217	470
Liberty	12	197	213
Madison			
Manatee	7	2,440	3,675
Marion	50	1,888	2,205
Monroe*			
Nassau	92	1,730	3,031
Okaloosa	17	119	157
Orange			
Osceola	11	390	1,155
Palm Beach	3	505	1,010
Pasco	20	813	1,220
Pinellas	62	1,755	2,550
Polk	8	116	182
Putnam	131	2,490	5,040
Santa Rosa	10	393	424
Seminole			
St. Johns	13	435	1,050
St. Lucie			
Sumter	1	25	25
Suwannee	14	389	340
Taylor			
Volusia	73	705	795
Wakulla			
Walton	10	329	679
Washington	59	949	1,607
Totals.....	1,153	34,542	\$ 50,927

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	SUGARCANE				
	STRUP			SUGAR	
	Acres	Barrels	Value	Pounds	Value
Alachua	492	3,914	\$ 38,100	.....	.....
Baker	98	862	8,650	200	14
Bay	161	305	5,370	.....	.....
Bradford	324	3,456	34,556	500	43
Brevard	7	.....	275	.....	.....
Broward .....	.....	.....	.....	.....	.....
Calhoun	202	1,405	24,094	.....	.....
Clarus	142	1,080	13,733	.....	.....
Clay	74	462	6,800	.....	.....
Columbia	214	2,288	30,789	2,500	371
Dade	15	.....	180	.....	.....
DeSoto	218	807	21,600	100	6
Duval	237	1,103	16,212	.....	.....
Escambia	199	1,171	17,182	.....	.....
Franklin	56	886	14,336	.....	.....
Gadsden	678	7,051	87,789	.....	.....
Hamilton	315	2,637	50,613	1,800	80
Hernando	612	603	12,037	.....	.....
Hillsborough	412	1,371	28,558	.....	.....
Holmes	393	2,486	37,286	.....	.....
Jackson	1,065	15,464	181,358	.....	.....
Jefferson	316	1,698	21,063	.....	.....
Lafayette	218	1,208	17,982	.....	.....
Lake	87	186	4,591	.....	.....
Lee	107	932	16,863	.....	.....
Leon	665	3,722	37,940	.....	.....
Levy	228	1,842	16,071	.....	.....
Liberty	70	538	6,751	.....	.....
Madison	243	1,436	20,137	.....	.....
Manatee	77	1,020	5,847	500	110
Marion	558	3,016	56,720	.....	.....
Monroe* .....	.....	.....	.....	.....	.....
Nassau	185	1,281	18,128	.....	.....
Okaloosa	233	1,362	20,151	.....	.....
Orange	13	48	1,380	.....	.....
Osceola	99	347	7,356	.....	.....
Palm Beach	44	410	6,075	.....	.....
Pasco	622	3,045	13,561	320	16
Pinellas	136	731	11,875	400	50
Polk	47	130	3,485	.....	.....
Putnam	181	740	21,463	.....	.....
Santa Rosa	300	1,579	27,500	.....	.....
Seminole	3	6	180	.....	.....
St. Johns	198	438	8,295	550	55
St. Lucie	8	36	893	.....	.....
Sumter	189	762	15,240	.....	.....
Suwannee	422	2,773	37,102	865	70
Taylor	179	1,171	16,428	.....	.....
Volusia	64	353	7,080	.....	.....
Wakulla	115	895	11,476	.....	.....
Walton	272	1,439	21,520	.....	.....
Washington	177	994	16,425	.....	.....
Totals.....	12,570	81,058	\$1,096,721	7,595	\$ 315

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	FIELD PEAS (or COW PEAS)		
	Acres	Bushels	Value
Alachua	190	1,200	\$ 2,470
Baker	10	100	200
Bay	60	1,249	1,899
Bradford	208	1,180	2,075
Brevard	56	678	1,678
Broward	3	35	85
Calhoun	140	1,264	2,582
Clrus	214	1,845	4,791
Clay	155	1,497	3,081
Columbia	248	1,624	4,170
Dade	14	300	1,550
DeSoto	391	4,137	5,345
Duval	96	1,800	3,415
Escambia	194	1,445	2,644
Franklin	48	1,158	2,316
Gadsden	172	1,770	3,628
Hamilton	594	5,885	5,885
Hernando	207	3,883	7,850
Hillsborough	581	6,741	13,315
Holmes	295	1,772	23,314
Jackson	441	13,332	6,000
Jefferson	135	718	1,219
Lafayette	670	3,623	6,750
Lake	311	1,878	3,993
Lee	112	814	2,149
Leon	558	2,070	4,076
Levy	159	1,672	1,854
Liberty	15	19	105
Madison			
Manatee	6	72	128
Marion	345	2,848	6,092
Monroe*			
Nassau	252	3,217	6,249
Okaloosa	361	3,208	4,283
Orange	113	1,245	2,362
Osceola	124	1,235	2,318
Palm Beach	18	1,086	1,681
Pasco	711	1,292	2,584
Pinellas	7	122	195
Polk	23	280	410
Pulnam	1,325	20,431	40,888
Santa Rosa	202	1,451	2,512
Seminole	27	885	600
St. Johns	123	2,225	2,363
St. Lucie	3	50	90
Sumner	50	723	943
Suwannee	302	1,982	3,461
Taylor	82	705	1,480
Volusia	733	4,456	8,012
Wakulla	19	195	470
Walton	187	1,552	2,442
Washington	360	2,289	2,880
Totals	11,605	115,007	\$ 213,859

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	FIELD PEA HAY (or COW PEA)		
	Acres	Tons	Value
Alachua	1,048	1,331	\$ 22,744
Baker	37	67	440
Bay	78	46	920
Bradford	219	290	5,180
Brevard	68	14	280
Broward	12	19	430
Calhoun	156	239	4,780
Citrus	164	1,307	4,500
Clay	122	120	2,248
Columbia	885	461	8,820
Dade	4	16	190
DeSoto	258	242	5,090
Duval	119	162	2,931
Escambia	307	278	5,288
Franklin	48	07	2,412
Gadsden	1,516	1,674	30,364
Hamilton	272	148	3,110
Hernando	56	67	1,150
Hillsborough	272	355	5,963
Holmes	54	43	680
Jackson	236	127	4,335
Jefferson	1,948	1,122	20,233
Lafayette	193	282	2,945
Lake	120	101	2,161
Lee	11	12	50
Leon	2,621	2,059	33,550
Levy	163	145	8,140
Liberty	2	2	50
Madison	1,368	715	10,605
Manatee	2	2	47
Marion	2,917	2,797	50,070
Mourree*			
Nassau	389	894	17,885
Okaloosa	122	82	1,543
Orange	135	140	2,902
Osceola	34	109	2,170
Palm Beach	9	8	130
Pasco	438	486	0,115
Pinellas	25	55	1,100
Polk	153	85	1,216
Putnam	727	2,034	31,565
Santa Rosa	256	190	3,672
Seminole	84	84	2,820
St. Johns	5,062	5,471	81,665
St. Lucie			
Sumter	346	214	4,030
Suwannee	1,221	916	17,587
Taylor	76	176	2,803
Volusia	773	726	14,520
Wakulla	64	96	1,925
Waltou	74	101	1,597
Washington	68	39	672
Totals	25,284	26,265	\$ 399,602

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	HAY, NATIVE GRASSES		
	Acres	Tons	Value
Alachua	1,013	2,296	\$ 31,421
Baker			
Bay	36	44	988
Bradford	1,422	2,571	25,373
Brevard	63	82	2,040
Broward	76	62	1,675
Calhoun	577	333	7,138
Citrus	535	384	8,945
Clay	209	260	5,073
Columbia	524	281	5,560
Dade	715	2,193	22,300
DeSoto	613	959	18,215
Duval	457	470	7,598
Escambia	1,236	961	16,300
Franklin			
Gadsden	919	823	12,056
Hamilton	8	3	69
Hernando	298	480	10,050
Hillsborough	989	1,811	30,473
Holmes	1,749	1,212	24,240
Jackson	7,475	3,655	53,400
Jefferson	162	100	1,508
Lafayette	4	2	45
Lake	1,701	1,143	21,191
Lee	18	11	235
Leon	1,011	732	10,615
Levy	387	378	5,520
Liberty			
Madison			
Manatee	615	380	6,575
Marion	5,144	4,757	82,148
Monroe*			
Nassau	136	198	2,287
Okaloosa	681	421	8,072
Orange	1,712	1,868	36,820
Osceola	785	834	16,833
Palm Beach	541	801	13,159
Pasco	310	640	5,080
Pinellas	1,400	1,332	26,790
Polk	745	949	13,370
Putnam	1,255	2,023	51,940
Santa Rosa	528	562	10,760
Seminole	238	273	4,655
St. Johns	586	580	10,120
St. Lucie	54	118	2,368
Sumter	2,107	1,635	25,540
Suwannee	881	449	4,703
Taylor	31	37	659
Volusia	1,515	1,537	30,740
Wakulla	12	6	120
Walton	139	109	2,170
Washington	441	326	4,708
Totals	42,962	41,681	\$ 688,600

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	NATAL GRASS HAY		
	Acres	Tons	Value
Alachua	72	120	\$ 1,388
Baker			
Bay			
Bradford	28	18	400
Brevard	2	3	90
Broward	3	4	60
Calhoun			
Citrus	62	45	920
Clay	2	3	60
Columbia			
Dade	30	60	1,200
DeSoto	48	144	1,130
Duval	74	68	1,170
Escambia			
Franklin			
Gadsden	41	20	315
Hamilton	6	4	80
Hernando	49	89	2,065
Hillsborough	116	221	3,454
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake	1,868	1,585	24,847
Lee	12	7	140
Leon	44	32	490
Levy	2	4	80
Liberty			
Madison			
Manatee			
Marion	347	341	6,113
Monroe*			
Nassau	2	4	70
Okaloosa			
Orange	80	112	2,540
Osceola	20	20	400
Palm Beach	1	2	30
Pasco	126	71	1,410
Pinellas	22	28	475
Polk	357	848	7,760
Putnam	26	79	1,540
Santa Rosa			
Seminole	5	6	180
St. Johns			
St. Lucie	52	23	60
Sumter	5	3	60
Suwannee	165	92	1,525
Taylor	9	6	111
Volusia	13	21	480
Wakulla	88	85	700
Walton	57	70	1,450
Washington	16	26	190
Totals	3,800	3,709	\$ 62,963

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	RHODES GRASS HAY		
	Acres	Tons	Value
Alachua			
Baker			
Bay			
Bradford			
Brevard	3	6	150
Broward	4	11	220
Calhoun			
Citrus	6	5	90
Clay	3	3	60
Columbia			
Dade	7	10	140
DeSoto	1	1	25
Duval			
Escambia			
Franklin			
Gadsden			
Hamilton			
Hernando	9	17	390
Hillsborough	21	24	600
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake			
Lee	4	11	320
Leon	1	1	8
Levy	1	1	15
Liberty			
Madison			
Manatee	7	7	75
Marion	28	27	510
Monroe*			
Nassau	1	1	20
Okaloosa			
Orange	5	6	120
Osceola			
Palm Beach	13	34	411
Pasco	89	66	1,445
Pinellas			
Polk	44	64	1,280
Putnam	1	1	20
Santa Rosa			
Seminole	4	5	150
St. Johns			
St. Lucie	1	6	120
Sumter			
Swannee			
Taylor			
Volusia			
Wakulla			
Walton			
Washington			
Totals	250	307	\$ 6,160

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	KUDZU HAY		
	Acres	Tons	Value
Alachua			\$
Baker			
Bay			
Bradford	8	9	140
Brevard			
Broward	3	5	100
Calhoun			
Citrus			
Clay			
Columbia			
Dade	5	4	70
DeSoto			
Duval			
Escambia			
Franklin			
Gadsden			
Hamilton			
Hernando			
Hillborough			
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake			
Lee			
Leon	35	130	2,600
Lery			
Liberty			
Madison			
Manatee	5	7	150
Marion			
Monroe			
Nassau			
Ocala			
Okaloosa			
Orange	6	30	600
Osceola			
Palm Beach			
Pasco			
Pineellas			
Polk			
Putnam			
Santa Rosa			
Seminole			
St. Johns			
St. Lucie			
Sumter			
Suwannee			
Taylor			
Volusia			
Wakulla			
Walton	8	15	30
Washington			
Totals	70	200	\$ 3,690

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	MILLETT		
	Acres	Tons	Value
Alachua	19	19	380
Baker	21	90	375
Bay	7	7	145
Bradford	148	241	4,770
Brevard			
Broward	8	8	120
Calhoun			
Citrus	12	30	300
Clay			
Columbia	35	23	440
Dade	54	42	1,570
DeSoto			
Duval			
Escambia	38	40	705
Franklin			
Gadsden	5	8	160
Hamilton			
Hernando			
Hillsborough	7	17	204
Holmes			
Jackson			
Jefferson			
Lafayette	3	2	20
Lake	11	13	295
Lee			
Leon	6	7	80
Levy			
Liberty			
Madison			
Manatee			
Marion	100	250	4,187
Monroe*			
Nassau	2	2	40
Okaloosa			
Orange			
Osceola	1	3	60
Palm Beach	16	17	490
Pasco	6	14	280
Pinellas	1	5	50
Polk			
Putnam	5	50	1,000
Santa Rosa			
Seminole			
St. Johns	5	8	200
St. Lucie			
Sumter	3	4	80
Suwannee	18	70	190
Taylor			
Volusia			
Wakulla			
Walton			
Washington			
Totals.....	529	988	\$ 16,231

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	PEANUTS		
	Acres	Bushels	Value
Alachua	14,812	273,604	\$ 176,879
Baker	3,768	32,885	32,875
Bay	238	2,631	2,142
Bradford	10,909	116,410	113,950
Brevard			
Broward			
Calhoun	4,132	133,264	183,250
Citrus	3,361	45,637	45,637
Clay	85	778	1,511
Columbia	12,583	238,441	238,441
Dade	2	56	100
DeSoto	53	920	1,129
Duval	18	345	615
Escambia	445	10,281	10,256
Franklin			
Gadsden	4,378	112,290	110,415
Hamilton	8,791	141,180	141,180
Hernando	959	44,411	45,680
Hillsborough	387	4,565	10,605
Holmes	8,728	124,428	124,428
Jackson	27,212	274,210	241,182
Jefferson	2,524	94,427	94,662
Lafayette	5,612	29,531	29,819
Lake	76	1,142	1,725
Lee	2	45	90
Leon	3,047	49,092	49,417
Levy	683	88,702	88,702
Liberty	1,398	31,853	29,827
Madison	8,840	206,990	215,151
Manatee	1	15	30
Marion	14,814	308,690	244,413
Monroe*			
Nassau	336	6,485	8,843
Okaloosa	1,568	19,225	18,538
Orange	15	460	740
Osceola			
Palm Beach	28	1,055	1,060
Pasco	536	7,869	7,400
Pinellas			
Polk	25	450	500
Putnam	170	3,165	6,330
Santa Rosa	1,546	27,975	29,044
Seminole			
St. Johns	10	500	500
St. Lucie	1	18	72
Sumter	4,926	51,123	51,123
Suwannee	15,820	282,827	277,358
Taylor	3,654	154,767	186,253
Volusia	165	8,503	7,680
Wakulla	1,612	38,210	33,210
Walton	3,604	34,250	34,250
Washington	3,553	53,276	49,932
Totals	175,856	3,047,210	\$ 2,896,624

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	TOBACCO, OPEN FIELD CULTURE		
	Acres	Pounds	Value
Alachua			\$
Baker			
Bay			
Bradford			
Brevard			
Broward			
Calhoun			
Citrus			
Clay			
Columbia			
Dade			
DeSoto			
Duval	11	3,200	800
Escambia			
Franklin			
Gadsden	1,061	877,447	141,223
Hamilton			
Hernando			
Hillborough			
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake			
Lee			
Leon	37	38,900	10,180
Levy			
Liberty			
Madison			
Manatee			
Marion			
Monroe*			
Nassau			
Okaloosa			
Orange			
Osceola			
Palm Beach			
Pasco			
Pinellas			
Polk			
Putnam			
Santa Rosa			
Seminole			
St. Johns			
St. Lucie			
Sumter			
Suwannee	20	140	140
Taylor			
Volusia			
Wakulla			
Walton	1	100	40
Washington	4	150	105
Totals.....	1,134	919,937	\$ 152,488

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	TOBACCO, GROWN UNDER SHADE		
	Acres	Pounds	Value
Alachua			\$.
Baker			
Bay			
Bradford			
Brevard			
Broward			
Calhoun			
Citrus			
Clay			
Columbia			
Dade			
DeSoto			
Duval			
Escambia			
Franklin			
Gadsden	1,883	1,701,919	607,443
Hamilton			
Hernando			
Hillsborough			
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake			
Lee			
Leon	21	25,550	7,840
Levy			
Liberty			
Madison	53	54,000	18,650
Manatee			
Marion			
Monroe*			
Nassau			
Okaloosa			
Orange			
Osceola			
Palm Beach			
Pasco	80	107,120	108,400
Pinellas			
Polk			
Putnam			
Santa Rosa			
Seminole			
St. Johns			
St. Lucie			
Sumter			
Suwannee			
Taylor			
Volusia			
Wekulla			
Walton			
Washington			
Totals	1,846	1,888,589	\$ 742,333

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	VELVET BEANS		
	Acres	Bushels	Value
Alachua	3,733	51,473	\$ 44,390
Baker	40	610	1,220
Bay	331	4,284	8,478
Bradford	1,019	2,198	2,211
Brevard	12	100	160
Broward .....	.....	.....	.....
Calhoun	557	44,245	44,298
Clats	1,307	7,931	22,950
Clay	310	2,398	6,023
Columbia	540	6,662	13,268
Dade	187	290	370
DeSoto	704	5,888	9,460
Duval	92	978	1,672
Eschmbla	1,053	12,343	16,347
Franklin .....	.....	.....	.....
Gadsden	444	5,076	12,040
Hamilton	3,068	30,660	61,100
Hernando	565	8,718	12,878
Hillsborough	702	8,746	14,481
Holmes	10,278	101,214	202,428
Jackson	2,540	25,149	41,140
Jefferson	180	1,035	1,610
Lafayette	1,165	6,032	11,604
Lake	277	3,301	4,549
Lee	40	565	1,240
Leon	2,012	18,258	25,182
Levy	1,166	15,450	30,780
Liberly	624	12,660	12,886
Madison .....	.....	.....	.....
Manatee .....	.....	.....	.....
Marion	7,563	80,353	77,035
Monroe* .....	.....	.....	.....
Nassau	340	3,654	7,359
Okaloosa	12,495	70,653	61,483
Orange	253	2,973	5,948
Osceola	12	129	372
Palm Beach .....	.....	.....	.....
Pasco	1,628	14,222	27,794
Pinellas	18	272	405
Polk	120	510	885
Putnam	1,036	12,692	31,520
Santa Rosa	5,760	70,191	71,933
Seminole	9	150	300
St. Johns .....	.....	.....	.....
St. Lucie .....	.....	.....	.....
Sumter	1,811	15,640	15,640
Swannee	1,180	8,568	11,324
Taylor	874	17,546	40,825
Volusia	323	2,390	4,780
Wakulla	620	8,295	8,210
Walton	8,522	72,946	145,892
Washington	1,328	15,240	14,076
Totals	77,945	783,280	\$ 1,147,754

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	VELVET BEAN HAY		
	Acres	Tons	Value
Alachua			\$.
Baker			
Bay			
Bradford			
Brevard	65	20	870
Broward			
Calhoun			
Citrus			
Clay	171	191	2,308
Columbia			
Dade	78	13	150
DeSoto			
Duval	10	10	209
Escambia	2,931	2,526	46,772
Franklin			
Gadsden	77	99	1,680
Hamilton	360	232	4,340
Hernando	1	1	20
Hillborough	39	46	1,118
Holmes	1	1	20
Jackson			
Jefferson			
Lafayette	8	40	350
Lake	7	25	82
Lee	170	30	300
Leon	8	7	140
Levy			
Liberty	12	18	400
Madison			
Manatee			
Marion	5	3	50
Monroe*			
Nassau	236	406	8,130
Okaloosa	13	13	214
Orange	2	5	100
Osceola	1	2	40
Palm Beach	3	5	90
Pasco	11	16	260
Pinellas	80	180	3,800
Polk	10	20	300
Putnam	372	1,266	17,710
Santa Rosa	30	25	448
Seminole	9	13	280
St. Johns	5	25	225
St. Lucie			
Sumter	3	3	60
Suwannee	1	1	20
Taylor			
Volusia	650	471	9,620
Wakulla			
Walton	221	218	5,480
Washington	21	17	247
Totals	5,631	5,948	\$ 105,641

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	RYE		
	Acres	Bushels	Value
Alachua			\$.
Baker			
Bay			
Bradford	8	8	20
Brevard			
Broward			
Calhoun			
Citrus			
Clay			
Columbia	174	1,770	3,602
Dade			
DeSoto			
Duval			
Escambia			
Franklin			
Gadsden			
Hamilton			
Hernando			
Hillsborough	22	1,819	1,859
Holmes			
Jackson			
Jefferson	4	50	100
Lafayette			
Lake			
Lee			
Leon	48	231	462
Levy			
Liberly			
Madison			
Manatee			
Marion	12	120	130
Montroe*	3	33	37
Nassau			
Okaloosa			
Orange			
Osceola			
Palm Beach			
Pasco			
Pinellas			
Polk			
Putnam	22	220	440
Santa Rosa			
Seminole			
St. Johns			
St. Lucie			
Sumter			
Suwannee	13	111	111
Taylor			
Volusia			
Wakulla			
Walton			
Washington			
Totals	306	4,362	\$ 6,761

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	CASSAVA		
	Acres	Tons	Value
Alachua			\$
Baker			
Bay			
Bradford			
Brevard			
Broward			
Calhoun			
Citrus			
Clay			
Columbia			
Dade			
DeSoto			
Duval	1	2	40
Escambia			
Franklin			
Gadsden			
Hamilton			
Hernando			
Hillaborough	28	47	1,250
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake	6	25	580
Lee	1	11	240
Leon			
Levy	1	1	15
Liberty			
Madison			
Manatee			
Marion	7	46	340
Monroe*			
Nassau			
Okaloosa			
Orange	5	13	101
Osceola			
Palm Beach			
Pasco	7	33	670
Pinellas			
Polk	2	2	20
Putnam	16	107	737
Santa Rosa			
Seminole	6	21	145
St. Johna	1	2	60
St. Lucie			
Sumter			
Suwannee			
Taylor			
Volusia			
Wakulla			
Walton			
Washington			
Totals.....	81	310	\$ 4,198

*Not reported.

TABLE No. 1--FIELD CROPS, 1915-16--Continued.

COUNTIES	ALFALFA (Lucerne)		
	Acres	Tons	Value
Alachua			\$
Baker			
Bay			
Bradford			
Brevard			
Broward			
Calhoun			
Citrus			
Clay			
Columbia			
Dade			
DeSoto			
Duval	4	20	400
Escambia			
Franklin			
Gadsden			
Hamilton			
Hernando			
Hillborough	1	10	100
Holmes			
Jackson			
Jefferson			
Lafayette	1	2	45
Lake			
Lee			
Leon	1	2	40
Levy			
Liberty			
Madison			
Manatee			
Marion			
Monroe*			
Nassau			
Okaloosa			
Orange			
Osceola			
Palm Beach	2	18	200
Pasco			
Pinellas			
Polk			
Putnam			
Santa Rosa			
Seminole			
St. Johns			
St. Lucie			
Sumter			
Suwannee			
Taylor			
Volusia			
Wakulla			
Walton			
Washington			
Totals	9	53	\$ 875

*Not reported.

TABLE No. 1—FIELD CROPS, 1915-16—Continued.

COUNTIES	CHUFAS		
	Acres	Bushels	Value
Alachua			\$
Baker			
Bay			
Bradford			
Brevard			
Broward			
Calhoun			
Citrus			
Clay			
Columbia			
Dade			
DeSoto			
Duval			
Escambia			
Franklin			
Gadsden			
Hamilton			
Hernando			
Hillsborough			
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake			
Lee			
Leon			
Levy			
Liberty			
Madison			
Manatee			
Marion			
Monroe*			
Nassau			
Okaloosa			
Orange			
Osceola			
Palm Beach			
Pasco			
Pinellas			
Polk			
Putnam	213	5,008	11,816
Santa Rosa			
Seminole			
St. Johns			
St. Lucie			
Sumter			
Suwannee			
Taylor			
Volusia			
Wakulla			
Wallon			
Washington			
Totals	213	5,008	\$ 11,816

*Not reported.

TABLE No. 2—VEGETABLES AND GARDEN PRODUCTS, 1915-16.

COUNTIES	ONIONS		
	Acres	Crates	Value
Alachua			\$.....
Baker			
Bay	28	937	1,000
Bradford	6	732	805
Brevard	9	975	1,502
Broward	2	218	246
Calhoun	1	377	381
Citrus	2	245	250
Clay			
Columbia	1	75	100
Dade	3	609	378
DeSoto	1	45	100
Duval	4	421	737
Escambia	4	227	258
Franklin	31	6,200	12,400
Gadsden			
Hamilton			
Hernando	4	640	800
Hillsborough	32	2,754	3,114
Holmes	2	70	162
Jackson			
Jefferson			
Lafayette	4	77	87
Lake	12	1,692	2,135
Lee			
Leon	2	253	521
Levy	1	40	80
Liberly			
Madison			
Manatee		1,150	1,700
Marion	5	460	660
Monroe*			
Nassau	2	301	431
Okaloosa			
Orange	8	1,620	2,570
Osceola	2	254	493
Palm Beach	39	7,772	11,850
Pasco	7	434	697
Pinellas	3	410	660
Polk	2	250	250
Putnam	1	40	80
Santa Rosa	3	140	280
Seminole			
St. Johns	15	1,063	2,126
St. Lucie	4	785	1,457
Sumter	2	260	305
Swannee	2	179	300
Taylor			
Volusia	46	8,480	11,181
Wakulla	2	150	300
Walton	4	157	383
Washington	4	33	54
Totals.....	300	40,554	\$ 61,351

*Not reported.

TABLE No. 2—VEGETABLES AND GARDEN PRODUCTS, 1915-16.
Continued.

COUNTIES	LETTUCE		
	Acres	Crates	Value
Alachua	278	48,031	\$ 35,341
Baker			
Bay	1	7	4
Bradford	1	6	20
Brevard	5	385	755
Broward	1	215	110
Calhoun			
Citrus	3	300	525
Clay			
Columbia			
Dade	18	1,180	3,330
DeSoto			
Duval	2	305	600
Escambia			
Franklin	17	690	690
Gadsden			
Hamilton			
Hernando			
Hillsborough	20	6,803	4,360
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake	16	4,060	8,355
Lee			
Leon			
Levy			
Liberty			
Madison			
Manatee	892	267,216	260,000
Marion	148	38,582	34,670
Monroe*			
Nassau			
Okaloosa			
Orange	258	90,595	102,758
Osceola	2	205	204
Palm Beach	7	1,461	2,290
Pasco			
Pineillas	9	1,022	1,580
Polk	1	50	50
Putnam			
Santa Rosa			
Seminole	704	447,170	397,565
St. Johns	2	800	1,600
St. Lucie	2	320	325
Sumter	17	3,850	2,435
Suwannee			
Taylor			
Volusia	07	13,425	13,515
Wakulla			
Walton	1	8	35
Washington	1	15	15
Totals	2,543	927,591	\$ 809,741

*Not reported.

TABLE No. 2—VEGETABLES AND GARDEN PRODUCTS, 1915-16.
Continued.

COUNTIES	CELERY		
	Acres	Crates	Value
Alachua			\$.
Baker			
Bay	1	5	6
Bradford			
Brevard	1	60	120
Broward	9	3,731	2,507
Calhoun			
Citrus			
Clay			
Columbia			
Dade			
DeSoto			
Duval	2	373	1,150
Escambia			
Franklin			
Gadsden			
Hamilton			
Hernando			
Hillsborough	114	127,011	121,693
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake	2	340	540
Lee			
Leon			
Levy			
Liberty			
Madison			
Manatee	450	330,988	330,988
Marion			
Mourree*			
Nassau			
Okaloosa			
Orange	1	400	600
Osceola	2	1,050	1,825
Palm Beach	2	720	1,085
Pasco	10	3,000	3,800
Pinellas	1	120	200
Polk	19	8,000	7,000
Pulnam	1	150	300
Santa Rosa			
Seminole	805	737,070	822,250
St. Johns			
St. Lucie			
Sumter			
Suwannee			
Taylor			
Volusia	18	4,215	4,995
Wakulla			
Walton			
Washington			
Totals	1,498	1,217,433	\$ 1,292,061

*Not reported.

TABLE No. 2—VEGETABLES AND GARDEN PRODUCTS, 1915-16.
Continued.

COUNTIES	PEPPER		
	Acres	Crates	Value
Alachua	64	4,025	\$ 4,700
Baker			
Bay			
Bradford			
Brevard	23	4,470	9,170
Broward	190	34,924	44,600
Calhoun			
Citrus			
Clay			
Columbia	1	125	75
Dade	388	92,587	123,337
DeSoto	77	17,238	18,658
Duval	2	343	408
Escambia			
Franklin	3	320	320
Gadsden			
Hamilton			
Hernando	2	220	175
Hillsborough	44	6,966	12,244
Holmes			
Jackson			
Jefferson			
Lafayette	1	5	5
Lake	5	750	1,100
Lee	186	54,250	54,250
Leon	1	120	230
Levy			
Liberty			
Madison			
Manatee	100	45,742	36,593
Marion			
Monroe*			
Nassau	1	65	77
Okaloosa			
Orange	21	7,775	8,330
Osceola	1	202	215
Palm Beach	961	310,513	290,082
Pasco	5	268	263
Pinellas	2	365	340
Polk	29	4,000	4,025
Putnam	1	180	340
Santa Rosa			
Seminole	90	23,050	27,785
St. Johns			
St. Lucie	46	11,618	15,797
Sumter	1	100	125
Suwannee			
Taylor			
Volusia	18	1,595	2,780
Wakulla			
Wallon			
Washington			
Totals	2,255	622,052	\$ 655,974

*Not reported.

TABLE No. 2—VEGETABLES AND GARDEN PRODUCTS, 1915-16.
Continued.

COUNTIES	IRISH POTATOES		
	Acres	Barrels	Value
Alachua	50	1,250	\$ 2,050
Baker	3	400	400
Bay	31	499	1,360
Bradford	12	238	408
Brevard	108	6,817	5,486
Broward	120	3,250	14,324
Calhoun	23	367	1,100
Citrus	6	333	630
Clay	117	2,273	10,380
Columbia	1	10	30
Dade	249	33,837	66,233
DeSoto	145	6,722	12,735
Duval	32	936	4,325
Escambia	16	725	930
Franklin	47	4,700	14,100
Gadsden	5	194	466
Hamilton			
Hernando	3	295	720
Hillsborough	565	13,705	42,099
Holmes	4	125	540
Jackson			
Jefferson	41	450	975
Lafayette	2	12	12
Lake	22	1,400	2,858
Lee	20	1,010	2,240
Leon	6	346	972
Levy	22	300	600
Liberty			
Madison			
Manatee	49	1,970	2,960
Marion	1	45	150
Monroe*			
Nassau	3	107	501
Oksloosa			
Orange	22	2,435	4,270
Osceola	48	5,800	6,312
Palm Beach	2,900	17,714	50,350
Pasco	14	625	983
Pinellas	34	1,549	6,176
Polk	44	2,154	2,235
Putham	2,683	51,800	234,893
Santa Rosa	7	260	815
Seminole	13	1,000	1,675
St. Johns	9,099	184,331	1,023,174
St. Lucie	75	1,655	10,278
Sumler	1	30	45
Suwannee	10	360	531
Taylor			
Volusia	1,317	30,742	107,630
Wakulla			
Walton	9	430	895
Washington	5	21	58
Totals	17,988	383,042	\$ 1,640,636

*Not reported.

TABLE No. 2—VEGETABLES AND GARDEN PRODUCTS, 1915-16.
Continued.

COUNTIES	CABBAGE		
	Acres	Crates	Value
Alachua	517	52,460	\$ 52,610
Baker			
Bay	24	760	1,250
Bradford	3	109	113
Brevard	18	1,720	2,095
Broward	7	765	764
Calhoun	3	247	305
Citrus	12	80	170
Clay	1	200	210
Columbia			
Dade	11	1,030	1,400
DeSoto	1	25	25
Duval	22	1,707	3,370
Escambia	13	572	1,403
Franklin	43	8,700	17,400
Gadsden			
Hamilton			
Hernando	2	180	175
Hillsborough	64	5,445	6,875
Holmes	3	70	210
Jackson	4	230	540
Jefferson			
Lafayette	5	65	64
Lake	1	10,556	11,625
Lee	1	40	120
Leon	4	608	735
Levy			
Liberly			
Madison			
Manatee			
Marion	45	5,710	3,670
Monroe*			
Nassau	2	200	213
Okaloosa			
Orange	10	950	1,300
Osceola	4	510	409
Palm Beach	66	13,326	26,640
Pasco	13	1,271	789
Pinellas	14	1,730	4,225
Polk	41	7,700	4,760
Putnam	4	633	1,050
Santa Rosa	9	513	800
Seminole	36	5,000	5,400
St. Johns	22	3,435	6,005
St. Lucie	6	000	1,136
Sumter	716	98,329	110,060
Swannee	9	263	423
Taylor	1	156	320
Volusia	211	23,502	23,425
Wakulla	2	00	115
Walton	5	209	418
Washington	5	47	56
Totals	1,980	253,024	\$ 293,605

*Not reported.

TABLE No. 2—VEGETABLES AND GARDEN PRODUCTS, 1915-16.
Continued.

COUNTIES	TOMATOES		
	Acres	Crates	Value
Alachua	7	800	\$ 700
Baker			
Bay	4	253	163
Bradford	25	2,078	1,815
Brevard	16	2,983	6,005
Broward	3,979	823,493	859,990
Calhoun			
Citrus	8	326	210
Clay	1	109	126
Columbia			
Dade	6,887	1,688,000	1,811,785
DeSoto	102	8,092	7,095
Duval	16	322	865
Escambia	9	769	923
Franklin	22	4,400	8,800
Gadsden			
Hamilton			
Hernando	20	1,505	2,750
Hillsborough	398	39,649	40,994
Holmes	3	153	246
Jackson	1	35	150
Jefferson			
Lafayette	4	69	71
Lake	52	4,095	5,192
Lee	170	38,302	38,302
Leon	3	280	457
Levy	7	643	643
Liberty			
Madison			
Manatee	3,000	328,310	500,000
Marion	134	5,000	4,832
Monroe*			
Nassau	1	100	150
Okaloosa			
Orange	129	18,085	19,760
Osceola	4	650	810
Palm Beach	1,479	416,323	583,560
Pasco	29	8,283	2,077
Pinehills	10	700	1,245
Polk	114	9,850	9,750
Putnam	5	790	995
Santa Rosa	3	382	350
Seminole	13	8,650	3,100
St. Johns	21	3,165	6,330
St. Lucie	179	25,477	33,439
Sumter	611	59,683	75,805
Suwannee	3	258	188
Taylor			
Volusia	135	17,190	17,440
Wakulla			
Walton	1	19	38
Washington			
* Totals	17,603	3,510,933	\$ 4,048,653

*Not reported.

TABLE No. 2—VEGETABLES AND GARDEN PRODUCTS, 1915-16.
Continued.

COUNTIES	SQUASHES		
	Acres	Crates	Value
Alachua			\$
Baker			
Bay	1	33	22
Bradford	5	350	270
Brevard	1	50	50
Broward	30	3,920	3,854
Calhoun			
Citrus			
Clay			
Columbia			
Dade	42	3,420	3,487
DeSoto	3	300	300
Duval	1	254	359
Escambia	2	28	43
Franklin	18	1,460	1,460
Gadsden			
Hamilton			
Hernando	1	150	200
Hillsborough	15	1,021	1,048
Holmes			
Jackson			
Jefferson			
Lafayette	6	130	79
Lake	10	2,255	2,835
Lee	12	1,830	1,830
Leon	1	140	115
Levy			
Liberty			
Madison			
Manatee	8	1,800	830
Marion	4	222	154
Monroe*			
Nassau	1	40	50
Okaloosa			
Orange	2	550	550
Osceola	1	45	45
Palm Beach	214	20,400	8,676
Pasco	1	65	65
Pinellas	3	125	110
Polk	2	300	400
Putnam			
Santa Rosa	1	110	110
Seminole	2	500	500
St. Johns			
St. Lucie	1	415	440
Sumter	4	640	370
Suwannee	2	70	64
Taylor			
Volusia	5	890	705
Wakulla			
Walton			
Washington			
Totals	405	41,541	\$ 29,263

*Not reported.

TABLE No. 2—VEGETABLES AND GARDEN PRODUCTS, 1915-16.
Continued.

COUNTIES	EGG PLANTS		
	Acres	Crates	Value
Alachua	11	2,000	\$ 1,400
Baker			
Bay	1	34	17
Bradford			
Brevard	7	675	980
Broward	51	5,975	6,876
Calhoun			
Citrus	18	822	539
Clay			
Columbia			
Dade	127	39,091	46,495
DeSoto	34	4,620	5,040
Duval	1	14	30
Escambia	1	60	60
Franklin	11	900	900
Gadsden			
Hamilton			
Hernando	16	1,838	1,876
Hillsborough	29	2,884	2,873
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake	14	1,495	1,675
Lee	54	16,580	16,580
Leon	1	150	150
Levy	2	50	50
Liberty			
Madison			
Mannatee	90	42,292	33,777
Marion	1	20	25
Monroe*			
Nassau			
Okaloosa			
Orange			
Osceola	23	4,442	4,664
Palm Beach	188	44,656	68,730
Pasco	15	2,671	3,798
Pinellas	5	90	100
Polk	23	4,095	4,095
Putnam			
Santa Rosa	1	30	45
Seminole	12	2,250	2,000
St. Johns			
St. Lucie	12	2,460	3,697
Sumter			
Suwannee	4	302	300
Taylor			
Volusia	13	2,175	2,485
Wakulla			
Walton			
Washington			
Totals	763	183,071	\$ 211,931

*Not reported.

TABLE No. 2.—VEGETABLES AND GARDEN PRODUCTS, 1915-16.
Continued.

COUNTIES	CUCUMBERS		
	Acres	Crates	Value
Alachua	221	19,710	\$ 62,260
Baker			
Bay			
Bradford	9	950	547
Brevard	1	68	338
Broward	8	475	1,405
Calhoun	10	1,700	900
Citrus	10	1,952	1,819
Clay			
Columbia			
Dade	21	385	629
DeSoto	351	32,600	41,237
Duval	5	524	1,318
Escambia			
Franklin	13	1,020	1,020
Gadsden			
Hamilton			
Hernando	8	850	925
Hillsborough	216	23,816	29,255
Holmes			
Jackson			
Jefferson			
Lafayette	4	70	70
Lake	64	9,360	13,485
Lee	11	1,275	2,520
Leon	4	229	354
Levy	502	112,878	106,005
Liberly			
Madison			
Manatee			
Marion	6	651	650
Monroe*			
Nassau			
Okaloosa			
Orange	245	36,352	45,407
Osceola	1	75	120
Palm Beach	20	4,007	7,180
Pasco	4	185	290
Pinellas	8	470	600
Polk	4	300	700
Putnam			
Santa Rosa	1	70	70
Seminole	1	75	80
St. Johns	12	905	1,015
St. Lucie	3	45	60
Sumter	500	68,320	102,156
Suwannee	19	1,763	1,280
Taylor			
Volusia	81	10,790	10,140
Wakulla			
Walton			
Washington			
Totals	2,822	331,878	\$ 433,443

*Not reported.

TABLE No. 2—VEGETABLES AND GARDEN PRODUCTS, 1915-16.
Continued.

COUNTIES	ROMAINE		
	Acres	Crates	Value
Alachua			
Baker			
Bay			
Bradford			
Brevard			
Broward	5	500	500
Calhoun			
Citrus			
Clay			
Columbia			
Dade			
DeSoto			
Duval			
Escambia			
Franklin			
Gadsden			
Hamilton			
Hernando			
Hillsborough	2	400	300
Holmes			
Jackson			
Jefferson			
Lafayette	7	123	123
Lake			
Lee			
Leon			
Levy			
Liberty			
Madison			
Manatee			
Marion			
Monroe			
Nassau			
Okaloosa			
Orange			
Osceola			
Palm Beach	1	75	100
Pasco			
Pinellas			
Polk			
Putnam			
Santa Rosa			
Seminole	10	6,500	5,700
St. Johns			
St. Lucie			
Sumter	60	26,060	15,970
Suwannee			
Taylor			
Volusia			
Wakulla			
Walton			
Washington			
Totals.....	94	34,557	\$ 22,892

TABLE No. 2—VEGETABLES AND GARDEN PRODUCTS, 1915-16.
Continued.

COUNTIES	WATERMELONS		
	Acres	Carloads	Value
Alachua	797	308	\$ 17,467
Baker	8	4	529
Bay	172	59	3,045
Bradford	25	21	5,105
Brevard	22	2	750
Broward	15	17	1,065
Calhoun	718	877	24,638
Citrus	26	19	2,230
Clay	99	47	2,545
Columbia	46	12	2,455
Dade	761	184	23,463
DeSoto	32	10	1,625
Duval	72	50	3,340
Escambia	49	98	2,940
Franklin	7	8	527
Gadsden	80	18	1,350
Hamilton	80	42	4,400
Hernando	219	135	19,800
Hillsborough	116	44	2,938
Holmes	101	36	1,735
Jackson	621	173	22,580
Jefferson	12	3	250
Lafayette	1,776	795	89,016
Lake	118	32	3,500
Lee	84	49	2,380
Leon	52	24	1,815
Levy			
Liberty			
Madison	40	20	4,000
Manatee	344	109	10,450
Marion	6	6	600
Monroe*			
Nassau	107	55	4,700
Okaloosa	20	15	1,840
Orange	0	3	330
Osceola	226	207	2,262
Palm Beach	41	16	1,600
Pasco	197	92	15,500
Pinellas	141	91	10,340
Polk	45	47	1,894
Putnam	7	4	350
Santa Rosa	29	39	2,880
Seminole	44	4	1,510
St. Johns	451	164	17,175
St. Lucie	932	328	13,227
Sumter	63	53	3,962
Suwannee	277	135	15,155
Taylor	6	2	260
Volusia	7	4	163
Wakulla			
Walton			
Washington			
Totals.....	9,097	4,568	\$ 350,481

*Not reported.

TABLE No. 2—VEGETABLES AND GARDEN PRODUCTS, 1915-16.
Continued.

COUNTIES	CANTALOUPE		
	Acres	Crates	Value
Alachua	10	6,000	\$ 6,000
Baker			
Bay			
Bradford			
Brevard			
Broward			
Calhoun			
Citrus			
Clay			
Columbia			
Dade	1	30	60
DeSoto			
Duval	1	22	44
Escambia	4	292	470
Franklin	15	2,050	5,000
Gadsden	12	262	448
Hamilton			
Hernando			
Hillsborough	12	795	1,428
Holmes			
Jackson	1	35	65
Jefferson			
Lafayette			
Lake	8	285	473
Lee	2	300	600
Leon	3	82	147
Levy			
Liberty			
Madison			
Manatee			
Marion	597	43,704	33,357
Monroe*			
Nassau			
Okaloosa	2	300	325
Orange			
Osceola			
Palm Beach			
Pasco	28	570	670
Pinellas			
Polk			
Putnam			
Santa Rosa	1	55	60
Seminole			
St. Johns	5	530	860
St. Lucie			
Sumter	18	1,135	1,465
Suwannee	3	158	82
Taylor			
Volusia	27	3,320	3,370
Wakulla			
Walton			
Washington			
Totals.....	759	60,825	\$ 55,814

*Not reported.

TABLE No. 2—VEGETABLES AND GARDEN PRODUCTS, 1915-16.
Continued.

COUNTIES	DASHEENS		
	Acres	Crates	Value
Alachua			
Baker			
Bay			
Bradford			
Brevard			
Broward			
Calhoun			
Citrus			
Clay			
Columbia			
Dade			
DeSoto			
Duval			
Escambia			
Franklin			
Gadsden			
Hamilton			
Hernando	2	500	600
Hillsborough			
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake			
Lee			
Leon			
Levy			
Liberty			
Madison			
Manatee			
Marion			
Monroe*			
Nassau			
Okaloosa			
Orange			
Osceola			
Palm Beach			
Pasco	6	574	604
Pinellas			
Polk			
Putnam			
Santa Rosa			
Seminole			
St. Johns			
St. Lucie			
Sumter			
Suwannee			
Taylor			
Volusia			
Wakulla			
Walton			
Washington			
Totals.....	8	1,074	\$ 1,264

*Not reported.

TABLE No. 2—VEGETABLES AND GARDEN PRODUCTS, 1915-16.
Continued.

COUNTIES	ENGLISH PEAS		
	Acres	Crates	Value
Alachua	320	7,726	\$ 31,225
Baker	1	50	75
Bay			
Bradford	13	1,183	1,412
Brevard	1	300	700
Broward	47	2,736	6,411
Calhoun			
Citrus			
Clay			
Columbia			
Dade	2	458	808
DeSoto	55	2,442	4,070
Duval			
Escambia			
Franklin	12	900	1,920
Godsden			
Hamilton			
Hernando	7	231	440
Hillsborough	63	10,258	4,703
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake	100	4,707	6,889
Lee			
Leon			
Levy	102	1,010	1,810
Liberty	20	400	400
Madison			
Manatee			
Marion	22	1,750	1,750
Monroe*			
Nassau			
Okaloosa			
Orange	26	1,175	1,205
Osceola	1	85	120
Palm Beach	4	673	1,798
Pasco	15	150	300
Pinellas	2	210	425
Polk	17	165	245
Putnam	4	60	180
Santa Rosa	1	20	30
Seminole	1	20	40
St. Johns			
St. Lucie	4	307	585
Sumner	116	1,394	2,186
Suwannee	1	42	45
Taylor			
Volusia	14	890	1,370
Wakulla			
Wallon			
Washington			
Totals.....	1,170	39,402	\$ 71,216

*Not reported.

TABLE No. 2.—VEGETABLES AND GARDEN PRODUCTS, 1915-16.
Continued.

COUNTIES	BEETS		
	Acres	Crates	Value
Alachua	12	1,004	\$ 1,560
Baker			
Bay			
Bradford	3	142	76
Brevard	1	50	75
Broward	3	350	350
Calhoun	1	150	225
Citrus			
Clay			
Columbia			
Dade	4	850	830
DeSoto			
Duval	3	361	715
Escambia	1	20	30
Franklin	10	3,250	6,500
Gadsden			
Hamilton			
Hernando			
Hillsborough	13	1,077	1,171
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake	7	555	850
Lee			
Leon	1	95	95
Levy			
Liberty			
Madison			
Manatee	3	510	450
Marion	25	1,700	1,100
Monroe*			
Nassau			
Okaloosa			
Orange			
Osceola	1	275	240
Palm Beach	3	1,689	2,330
Pasco			
Pinellas	1	200	220
Polk			
Poinam			
Santa Rosa			
Seminole	5	1,200	1,100
St. Johns	504	11,008	22,014
St. Lucie	5	648	803
Sumter	2	153	310
Suwannee			
Taylor			
Volusia	14	1,965	2,000
Wakulla			
Walton			
Washington			
Totals	634	27,152	\$ 42,986

*Not reported.

TABLE No. 2—VEGETABLES AND GARDEN PRODUCTS, 1915-16.
Continued.

COUNTIES	BEANS		
	Acres	Cratea	Value
Alachua	513	47,641	\$ 93,807
Baker			
Bay	5	209	97
Bradford	35	1,896	1,581
Brevard	95	6,245	19,580
Broward	615	78,895	95,496
Calhoun			
Citrus	1	26	28
Clay	1	20	22
Columbia	1	15	23
Dade	822	70,208	98,079
DeSoto	774	53,197	56,914
Duval	18	1,131	1,805
Escambia	2	107	229
Franklin	27	5,400	10,000
Gadsden	10	865	1,485
Hamilton			
Hernando	11	785	1,150
Hillsborough	620	42,142	42,929
Holmes	1	38	67
Jackson			
Jefferson			
Lafayette	9	195	195
Lake	134	7,523	10,400
Lee	18	1,470	2,255
Leon	1	88	97
Levy			
Liberty			
Madison			
Manatee	442	3,400	4,925
Marion	181	13,204	8,390
Monroe*			
Nassau	1	100	150
Okaloosa			
Orange	44	3,177	3,242
Osceola	8	707	1,254
Palm Beach	827	29,401	39,785
Pasco	41	1,526	1,676
Pinellas	23	1,535	2,150
Polk	57	3,887	4,395
Putnam	110	10,545	15,765
Santa Rosa	1	20	30
Seminole	37	7,105	6,650
St. Johns	1	28	64
St. Lucie	427	47,931	80,228
Sumter	913	42,975	57,826
Suwannee	6	273	271
Taylor	1	20	34
Volusia	17	1,560	1,925
Wakulla			
Walton	1	60	70
Washington			
Totals.....	6,850	485,410	\$ 666,169

*Not reported.

TABLE No. 2—VEGETABLES AND GARDEN PRODUCTS, 1915-16.
Continued.

COUNTIES	OKRA		
	Acres	Crates	Value
Alachua			
Baker			
Bay			
Bradford			
Brevard			
Broward			
Calhoun			
Citrus			
Clay			
Columbia			
Dade			
DeSoto			
Duval			
Escambia			
Franklin			
Gadsden			
Hamilton			
Hernando	211	8,990	20,895
Hillsborough			
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake			
Lee			
Leon			
Levy			
Liberty			
Madison			
Manatee			
Marion			
Monroe*			
Nassau			
Okaloosa			
Orange			
Osceola			
Palm Beach			
Pasco			
Pinellas			
Polk			
Putnam			
Santa Rosa			
Seminole			
St. Johna			
St. Lucie			
Sumter			
Suwannee			
Taylor			
Volusia			
Wakulla			
Walton			
Washington			
Totals.	211	8,990	\$ 20,895

*Not reported.

TABLE No. 2—VEGETABLES AND GARDEN PRODUCTS, 1915-16.
Continued.

COUNTIES	CAULIFLOWER		
	Acres	Crates	Value
Alachua			
Baker			
Bay			
Bradford			
Brevard			
Broward			
Calhoun			
Citrus			
Clay			
Columbia			
Dade			
DeSoto			
Duval			
Escambia			
Franklin			
Gadsden			
Hamilton			
Hernando			
Hillsborough			
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake			
Lee			
Leon			
Ley			
Liberty			
Madison			
Manatee	60	23,246	17,564
Marion			
Monroe*			
Nassau			
Okaloosa			
Orange			
Osceola			
Palm Beach			
Pasco			
Pinellas			
Polk			
Putnam			
Santa Rosa			
Seminole			
St. Johns			
St. Lucie			
Sumter			
Suwannee			
Taylor			
Volusia			
Wakulla			
Walton			
Washington			
Totals	60	23,246	\$ 17,564

*Not reported.

TABLE No. 3—FRUIT PRODUCTS.

COUNTIES	ORANGES				
	Bear- ing Trees	Non- Bearing Trees in Grove Form	Trees in Nursery Form	Crates	Value
Alachua	31,385	1,230	4,100	68,055	\$ 30,172
Baker	1,180	24	100,000	195	4,897
Bay	71	1,655	125	125	280
Bradford	3,366	479		4,660	3,337
Brevard	237,410	117,537	754,064	405,894	678,796
Broward	1,804	4,285	1,355	6,735	7,900
Calhoun	4,719	9,138	113,562	9,438	48,169
Citrus	14,095	12,896	832	30,401	42,841
Clay	2,461	330		2,300	4,337
Columbia	1,378	103		1,300	2,021
Dade	52,222	34,712	56,253	75,738	105,902
DeSoto	259,718	259,756	349,353	823,373	696,074
Duval	18,614	5,978	159	15,823	51,423
Escambia	1,221	9,300	19,881	1,189	3,203
Franklin	2,037	1,409		6,105	22,400
Gadsden	69	93	38	127	248
Hamilton					
Hernando	17,408	23,001	12,415	23,072	24,002
Hillsborough	208,888	164,241	96,347	460,235	460,744
Holmes	90	1,021	6	57	189
Jackson	105			30	35
Jefferson	31	39		32	94
Lafayette	290	467	50	390	520
Lake	364,806	111,609	681,169	433,109	499,746
Lee	111,873	57,369	34,945	188,891	188,891
Leon	398	782	6	377	699
Levy	3,891	350	43	4,094	8,098
Liberty	569	675	0	215	2,028
Madison					
Manatee	153,477	30,570	66,500	265,834	266,794
Marion	162,764	5,815	5,709	217,283	251,532
Monroe*					
Nassau	1,204	1,821	65	1,400	2,872
Ocala	248	1,460		224	353
Orange	469,393	237,258	369,090	766,779	915,846
Osceola	67,181	55,249	62,290	111,851	89,491
Palm Beach	30,950	32,643	21,315	81,437	161,764
Polk	52,561	68,758	10,885	65,515	69,831
Pinellas	155,635	78,530	63,515	233,390	245,450
Polk	297,763	496,382	144,625	483,788	812,115
Putnam	276,604	23,153	57,500	399,596	416,090
Santa Rosa	3,620	8,214	3,000	3,167	9,578
Seminole	106,104	2,987	11,625	289,655	296,000
St. Johns	43,026	16,088	459	74,078	148,176
St. Lucie	56,723	86,021	267,680	72,501	120,709
Sumter	62,254	5,551	100	147,037	149,947
Suwannee	318	37	9	753	1,148
Taylor	522	818		941	2,470
Volusia	340,680	99,710	120,000	689,930	689,930
Wakulla					
Walton	1,458	3,620	108	544	1,502
Washington	184	214	301	52	297
Totals	3,622,743	2,072,978	3,429,479	6,477,321	\$7,366,106

*Not reported.

- TABLE No. 3—FRUIT PRODUCTS—Continued.

COUNTIES	LEMONS				
	Bear- Trees log	Non- Trees Bearing	Trees in Form Nursery	Crates	Value
Alachua					\$
Baker					
Bay		43			
Bradford					
Brevard	82	1,007	100	116	212
Broward	82	142	26	65	180
Calhoun	1	12		2	13
Citrus	46	80	11	130	637
Clay					
Columbia	5			7	17
Dade	1,811	3,065	39,853	477	621
DeSoto	133	1,798	2,500	215	234
Duval	14	39	12	22	320
Escambia		62	106		
Franklin	502	352		506	1,530
Gadsden					
Hamilton					
Hernando	8	7		29	71
Hillsborough	1,657	1,847	2,203	2,147	4,516
Holmes	2	5		3	9
Jackson					
Jefferson					
Lafayette	1			1	2
Lake	161	270	14,407	230	313
Lee	1,024	2,620	3,506	1,706	3,412
Leon	16	11		2	6
Levy					
Liberty	1	9		4	7
Madison					
Manatee	290	38	72,000	196	330
Marion	50			50	75
Monroe*					
Nassau	17	84			
Okaloosa	6	511		15	47
Orange		971		3	6
Osceola	15	1,931	264	12	2,175
Palm Beach	1,243	2,260	2,965	2,266	6,983
Pasco	130	275	558	249	387
Pinellas	62	1,228	51,400	80	280
Polk	28	117	93,850	94	159
Putnam					
Santa Rosa	15	22	200	10	36
Seminole	154	100		170	330
St. Johns	5			3	6
St. Lucie	560	917	95,111	499	950
Sumter	2			5	10
Suwannee	16	1		4	16
Taylor	1	31		1	4
Volusia					
Wakulla					
Walton	21	169		17	51
Washington		9			
Totals	8,054	20,643	377,262	9,336	\$ 23,895

*Not reported.

TABLE No. 3—FRUIT PRODUCTS—Continued.

COUNTIES	LIMES		
	Trees	Crates	Value
Alachua			\$
Baker			
Bay			
Bradford			
Brevard	2,314	382	704
Broward	1,890		
Calhoun			
Citrus	12	12	104
Clay			
Columbia			
Dade	45,747	24,799	48,321
DeSoto	216	221	342
Duval	14	8	25
Escambia			
Franklin			
Gadsden			
Hamilton			
Hernando	123	215	240
Hillsborough	694	512	1,956
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake	492	250	777
Lee	3,387	2,012	4,470
Leon	209	30	150
Levy			
Liberty			
Madison			
Manatee	103	24	66
Marion			
Monroe*			
Nassau			
Okaloosa			
Orange	1	15	40
Osceola	493	20	30
Palm Beach	4,891	3,441	10,399
Pasco	350	38	63
Pinellas	570	54	129
Polk	549	520	770
Putnam			
Santa Rosa			
Seminole	290	800	1,200
St. Johns	2	2	4
St. Lucie	17,412	488	755
Sumter	2	10	30
Suwannee			
Taylor			
Volusia			
Wakulla			
Walton			
Washington			
Totals	79,452	34,262	\$ 70,805

*Not reported.

TABLE No. 3—FRUIT PRODUCTS—Continued.

COUNTIES	POMELOS (Grapefruit)				
	Bear- ing Trees	Non- Bearing Trees	Trees in Nursery Form	Crates	Value
Alachua	683			1,295	\$ 1,831
Baker	50	12	10,000	350	2,674
Bay	1	293		2	4
Bradford	3			6	6
Brevard	55,225	45,474	2,125	78,294	123,153
Broward	3,622	14,721	62,808	9,605	3,720
Calhoun	101	375	300	212	311
Citrus	759	1,487	226	1,634	2,484
Clay	83	12		82	192
Columbia	0			31	72
Dade	211,614	273,955	237,744	324,769	408,591
DeSoto	75,264	73,326	50,975	190,168	162,015
Duval	1,381	477	15	1,134	3,982
Escambia	56	735	288	63	108
Franklin	392	279		176	568
Gadsden	2			3	8
Hamilton					
Hernando	8,223	9,537	5,055	10,358	16,634
Hillborough	33,625	53,496	3,294	69,464	123,194
Holmes		13			
Jackson					
Jefferson					
Lafayette	8	3		9	20
Lake	64,174	46,830	1,003,948	92,803	117,497
Lee	182,886	61,901	76,015	251,255	314,008
Leon	510	149	20	751	1,512
Levy	46	110	25	165	212
Liberty	5	16		2	59
Madison					
Manatee	141,883	53,384	130,000	250,093	421,046
Marion	4,180	1,011		7,648	6,225
Monroe*					
Nassau	8	100		4	11
Okaloosa	5	52		1	2
Orange	76,505	79,583	148,060	141,572	169,784
Osceola	11,422	33,237	10,000	20,207	20,594
Palm Beach	41,511	39,096	27,057	226,054	592,975
Pasco	11,030	87,200	30,113	14,773	14,480
Pinellas	174,606	137,200	69,800	309,956	423,800
Polk	154,182	234,090	110,703	251,859	257,434
Putnam	7,722	1,275		30,409	104,069
Santa Rosa	8	60	700	0	13
Seminole	6,130	5,130	700	14,450	18,722
St. Johns	335	56	1	649	1,298
St. Lucie	74,120	131,824	110,863	98,668	172,288
Sumter	250	1,135		1,350	1,725
Swansee	33			97	137
Taylor	4				
Volusia	45,915	30,055	26,000	87,970	127,515
Wakulla					
Walton	387	3,897		234	703
Washington		10			
Totals.....	1,388,300	1,371,010	2,125,835	2,498,565	3,615,766

*Not reported

TABLE No. 3—FRUIT PRODUCTS—Continued.

COUNTIES	SUGAR APPLES	
	Crates	Value
Alachua		\$.
Baker		
Bay		
Bradford		
Brevard		
Broward		
Calhoun		
Citrus		
Clay		
Columbia		
Dade	325	371
DeSoto	2	5
Duval		
Escambia		
Franklin		
Gadsden		
Hamilton		
Hernando		
Hillsborough	12	32
Holmes		
Jackson		
Jefferson		
Lafayette		
Lake		
Lee	2	15
Leon		
Levy		
Liberty		
Madison		
Manatee		
Marion		
Monroe*		
Nassau		
Okaloosa		
Orange		
Osceola		
Palm Beach	260	273
Pasco		
Pinellas		
Polk		
Putnam		
Santa Rosa		
Seminole		
St. Johns		
St. Lucie	11	10
Sumter		
Suwannee		
Taylor		
Volusia		
Wakulla		
Walton		
Washington		
Totals	621	\$ 646

*Not reported.

TABLE No. 2—FRUIT PRODUCTS—Continued.

COUNTIES	AVOCADOS		
	Trees	Crates	Value
Alachua			\$
Baker			
Bay			
Bradford			
Brevard			
Broward	8,507	1,038	2,889
Calhoun			
Citrus			
Clay			
Columbia			
Dade	76,876	16,225	44,273
DeSoto	17	33	58
Duval	2	2	23
Escambia			
Franklin			
Gadsden			
Hamilton			
Hernando			
Hillsborough	1,218	1,628	4,257
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake	5	3	10
Lee	3,172	1,113	2,242
Leon			
Levy			
Liberty			
Madison			
Manatee	1,117	210	450
Marion			
Monroe*			
Nassau	3	2	7
Okaloosa			
Orange			
Osceola			
Palm Beach	18,188	10,246	3,710
Pasco			
Pinellas	620	386	1,791
Polk			
Putnam			
Santa Rosa			
Seminole			
St. Johns			
St. Lucie	1,764	225	923
Sumter			
Suwannee			
Taylor			
Volusia			
Wakulla			
Walton			
Washington			
Totals	110,995	31,111	\$ 60,033

*Not reported.

TABLE No. 3—FRUIT PRODUCTS—Continued.

COUNTIES	PINEAPPLES	
	Crates	Value
Alachua		\$
Baker .....		.....
Bay .....		.....
Bradford .....		.....
Brevard	330	350
Broward	400	400
Calhoun .....		.....
Citrus .....		.....
Clay .....		.....
Columbia .....		.....
Dade	30,065	62,675
DeSoto	15,080	23,685
Duval	24	68
Escambia .....		.....
Franklin .....		.....
Gadsden .....		.....
Hamilton .....		.....
Hernando .....		.....
Hillsborough	252	490
Holmes .....		.....
Jackson .....		.....
Jefferson .....		.....
Lafayette .....		.....
Lake .....		.....
Lee	667	1,332
Leon .....		.....
Levy .....		.....
Liberty .....		.....
Madison .....		.....
Manatee	3	6
Marion .....		.....
Monroe .....		.....
Nassau .....		.....
Okaloosa .....		.....
Orange	950	2,950
Osceola .....		.....
Palm Beach	324,281	374,513
Pasco	9	36
Pinellas .....		.....
Polk .....		.....
Putnam .....		.....
Santa Rosa .....		.....
Seminole .....		.....
St. Johns .....		.....
St. Lucie	122,246	113,270
Sumter .....		.....
Suwannee .....		.....
Taylor .....		.....
Volusia .....		.....
Wakulla .....		.....
Walton .....		.....
Washington .....		.....
Totals	503,287	\$ 579,781

*Not reported.

TABLE No. 3—FRUIT PRODUCTS—*Continued.*

COUNTIES	BANANAS	
	Bunches	Value
Alachua		\$.
Baker		
Bay		
Bradford		
Brevard	2,435	1,326
Broward	2,850	1,550
Calhoun		
Chiefs	120	95
Clay	50	30
Columbia		
Dade	14,947	8,820
DeSoto	230	320
Duval	192	539
Escambia		
Franklin	107	75
Gadsden		
Hamilton		
Hernando	383	445
Hillsborough	5,120	5,106
Holmes		
Jackson		
Jefferson		
Lafayette	2	5
Lake	528	284
Lee	1,660	881
Leon	28	28
Levy	0	10
Liberty		
Madison		
Manatee	1,450	710
Marion		
Monroe*		
Nassau	197	205
Okaloosa		
Orange	2,523	1,650
Osceola	5,720	3,107
Palm Beach	28,335	10,730
Pasco	10	20
Pinellas	1,051	743
Polk	136	162
Putnam		
Santa Rosa		
Seminole		
St. Johns	20	20
St. Lucie	1,032	2,973
Sumter		
Suwannee		
Taylor		
Volusia		
Wakulla		
Walton	2	2
Washington		
Totals	\$9,077	\$ 39,810

*Not reported.

TABLE No. 3—FRUIT PRODUCTS—Continued.

COUNTIES	MANGOES		
	Trees	Crates	Value
Alachua			\$.
Baker			
Bay			
Bradford	33	100	208
Brevard	534	250	250
Broward			
Calhoun			
Clarks			
Clay			
Columbia			
Dade	27,367	7,496	8,956
DeSoto	973	903	939
Duval	0	6	25
Escambia			
Franklin			
Godsden			
Hamilton			
Hernando			
Hillsborough	1,807	2,419	5,276
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake	1	3	12
Lee	4,080	4,838	4,838
Leon			
Levy			
Liberty			
Madison			
Manatee	1,500	427	1,620
Marion			
Monroe*			
Nassau			
Okaloosa			
Orange			
Osceola			
Palm Beach	10,984	9,834	9,834
Pasco	2	2	4
Pinellas	407	120	245
Polk	17	43	38
Putnam			
Santa Rosa			
Seminole			
St. Johns			
St. Lucie	1,736	1,325	2,316
Sumter			
Suwannee			
Taylor			
Volusia			
Wakulla			
Wallon			
Washington			
Totals	49,450	27,766	\$ 34,502

*Not reported

TABLE No. 3—FRUIT PRODUCTS—Continued.

COUNTIES	JAPAN PERSIMMONS		
	Trees	Crates	Value
Alachua			\$
Baker	307	540	790
Bay	39		
Bradford	601	403	809
Brevard	172	79	358
Broward	28		
Calhoun	9	57	63
Citrus	30	30	30
Clay	203	107	200
Columbia	5	10	18
Dade	387	2	5
DeSoto	13	3	4
Duval	363	197	1,089
Escambia	1,878	183	276
Franklin	482	410	482
Gadsden			
Hamilton			
Hernando	383	209	1,000
Hillsborough	527	698	1,833
Holmes			
Jackson			
Jefferson			
Lafayette	4	2	2
Lake	360	86	155
Lee	32	11	26
Leon	15	12	18
Levy	5	10	20
Liberty			
Madison			
Manatee			
Marion	171	210	395
Monroe*			
Nassau	443	316	537
Okaloosa	9	12	11
Orange	290	62	162
Osceola	31	1	2
Palm Beach	655	20	52
Pasco	72	37	83
Pinellas	169	17	35
Polk			
Putnam	133	139	237
Santa Rosa	4	2	4
Seminole	12	12	17
St. Johns	566	639	639
St. Lucie	5,119	77	134
Sumter	120	205	205
Suwannee			
Taylor			
Volusia	797	447	720
Wakulla			
Walton	103	70	70
Totals.....	14,348	5,815	\$ 11,471

*Not reported.

TABLE No. 3—FRUIT PRODUCTS—Continued.

COUNTIES	SAPODILLAS	
	Crates	Value
Alachua		\$.
Baker		
Bay		
Bradford		
Brevard		
Broward		
Calhoun		
Citrus		
Clay		
Columbia		
Dade	532	706
DeSoto	9	0
Duval	3	10
Escambia		
Franklin		
Gadsden		
Hamilton		
Hernando		
Hillsborough	45	141
Holmes		
Jackson		
Jefferson		
Lafayette		
Lake		
Lee	192	154
Leon		
Levy		
Liberty		
Madison		
Manatee	50	56
Marion		
Monroe*		
Nassau		
Okaloosa		
Orange		
Osceola		
Palm Beach	490	457
Passo		
Pinellas		
Polk	2	2
Putnam		
Santa Rosa		
Seminole		
St. Johns		
St. Lucie		
Sumter		
Suwannee		
Taylor		
Volusia		
Wakulla		
Walton		
Washington		
Totals	1,283	\$ 1,520

*Not reported.

TABLE No. 3—FRUIT PRODUCTS—Continued.

COUNTIES	GUAVAS	
	Crates	Value
Alachua		\$
Baker		
Bay		
Bradford		
Brevard	1,886	1,852
Broward		
Calhoun		
Citrus		
Clay	2	0
Columbia		
Dade	7,002	4,856
DeSoto	2,041	2,041
Duval	64	142
Escambia		
Franklin		
Gadsden		
Hamilton		
Hernando	394	424
Hillsborough	20,570	19,535
Holmes		
Jackson		
Jefferson		
Lafayette		
Lake	1,701	1,570
Lee	3,424	3,424
Leon		
Levy		
Liberty		
Madison		
Manatee	145	100
Marion	800	800
Monroe*		
Nassau	10	14
Okaloosa		
Orange	426	521
Osceola	205	126
Palm Beach	8,350	8,350
Pasco	940	1,183
Pinellas	2,260	2,372
Polk	456	448
Putnam	134	207
Santa Rosa		
Seminole	75	75
St. Johns	4	12
St. Lucie	5,268	4,373
Sumter		
Suwannee		
Taylor		
Volusia	3,085	4,534
Wakulla		
Walton		
Washington		
Totals	67,810	\$ 56,975

*Not reported.

TABLE No. 3—FRUIT PRODUCTS—Continued.

COUNTIES	COCOANUTS		
	Trees	Nuts	Value
Alachua			\$.
Baker			
Bay	5		
Bradford			
Brevard	19	6	1
Broward	746	500	25
Calhoun			
Citrus			
Clay			
Columbia			
Dade	127,004	2,610,000	52,846
DeSoto	23	14	1
Duval			
Escambia			
Franklin			
Gadsden			
Hamilton			
Hernando			
Hillsborough			
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake			
Lee	341	3,600	360
Leon			
Levy			
Liberty			
Madison			
Manatee			
Marion			
Monroe*			
Nassau			
Okaloosa			
Orange			
Osceola			
Palm Beach	77,631	277,896	17,787
Pasco			
Pinellas	4		
Polk			
Putnam			
Santa Rosa			
Seminole			
St. Johns			
St. Lucie	1,325	2,100	173
Sumter			
Suwannee			
Taylor			
Volusia			
Wakulla			
Walton			
Washington			
Totals	207,164	2,894,206	\$ 71,184

*Not reported.

TABLE No. 8—FRUIT PRODUCTS—Continued.

COUNTIES	PECANS			
	Bear- ing Trees	Non- Bearing Trees	Bushels	Value
Alachua	8,152	44,813	30,840	\$ 85,600
Baker	4,082	339,348	2,037	11,828
Bay		301		
Bradford	2,720	3,142	1,727	9,180
Brevard	47	24	19	105
Broward				
Calhoun	505	36,871	217	1,713
Citrus	200	780	344	2,064
Clay	391	335	172	2,082
Columbia	1,679	2,555	982	8,035
Dade	132	35	1	4
DeSoto	7	30	15	20
Duval	1,324	5,415	3,148	35,091
Escambia	4,320	13,616	1,725	9,656
Franklin	198	386	396	1,584
Gadsden	2,676	4,529	3,708	12,305
Hamilton	519	323	1,539	3,100
Hernando	51	1,595	54	158
Hillsborough	214	977	188	944
Holmes	378	771	228	1,380
Jackson				
Jefferson	15,986	37,728	95,101	257,693
Lafayette	331	207	208	748
Lake	261	2,004	204	1,577
Lee	0	30	25	80
Leon	5,077	706,333	5,733	23,950
Levy	1,023	4,131	426	2,547
Liberty	98	37	111	249
Madison				
Manatee	30	10	21	105
Marion	1,460	1,737	273	2,244
Monroe*				
Nassau	3,451	3,516	2,756	16,443
Okaloosa	2,384	7,522	1,114	5,127
Orange	421	1,062	282	2,215
Osceola	108	1,506	33	423
Palm Beach				
Pasco	145	1,782	215	3,138
Pinellas	243	478	70	300
Polk	15	17	22	80
Putnam	897	87,760	1,016	2,096
Santa Rosa	5,252	7,123	2,092	15,264
Seminole	28	50	50	200
St. Johns	1,131	7,835	2,642	15,313
St. Lucie	20	66	36	283
Sumter	25	125	22	126
Suwannee	3,771	709	1,323	7,453
Taylor	30	208	70	294
Volusia	2,571	2,460	1,540	3,532
Wakulla	184	180	184	736
Walton	980	484	474	3,884
Washington	621	1,205	135	1,080
Totals.....	74,177	1,333,685	165,445	\$ 562,216

*Not reported.

TABLE No. 3—FRUIT PRODUCTS—Continued.

COUNTIES	STRAWBERRIES		
	Acres	Quarts	Value
Alachua	29	13,620	\$ 2,673
Baker	11	11,000	1,105
Bay	1	160	37
Bradford	1,583	2,380,698	263,319
Brevard	2	4,500	920
Broward	1	150	40
Calhoun			
Citrus			
Clay	27	47,428	5,449
Columbia			
Dade	14	60,343	20,624
DeSoto	10	15,300	1,855
Duval	41	21,975	5,546
Escambia	4	6,426	280
Franklin			
Gadsden			
Hamilton			
Hernando	14	19,850	1,825
Hillsborough	254	1,710,075	228,488
Holmes			
Jackson			
Jefferson			
Lafayette			
Lake	8	2,900	835
Lee	1	300	40
Leon	1	500	122
Levy			
Liberty			
Madison			
Manatee			
Marion	1	200	60
Monroe*			
Nassau	20	20,720	1,869
Okaloosa	1	552	80
Orange	16	33,700	7,215
Osceola	4	19,000	5,045
Palm Beach	2	1,360	674
Pasco	95	48,034	6,858
Pinellas	12	27,660	5,260
Polk	240	621,450	63,850
Putnam	15	50,300	10,520
Santa Rosa	1	1,000	125
Seminole	1	400	40
St. Johns	27	18,200	3,268
St. Lucie	3	3,110	623
Sumter	8	3,827	620
Swannsee	20	13,260	1,251
Taylor			
Volusia	26	73,850	7,905
Wakulla			
Walton	6	4,170	409
Washington	1	188	15
Totals	2,500	5,436,204	\$ 646,505

*Not reported.

TABLE No. 3—FRUIT PRODUCTS—Continued.

COUNTIES	PEARS			
	Bear- ing Trees	Non- Bearing Trees	Barrels	Value
Alachua	4,903	350	1,250	\$ 2,915
Baker	250	5,309	335	2,803
Bay	258	84	204	621
Bradford	5	70	10	53
Brevard				
Broward	120	89	34	233
Calhoun	560	158	574	1,377
Citrus	807	54	348	1,111
Clay	234	5	219	439
Columbia				
Dade	5	8	1	3
DeSoto	966	943	771	6,440
Duval	2,331	31,130	1,006	3,022
Escambia	1,378	465	736	2,512
Franklin	139	166	194	567
Gadsden	362	181	1,064	2,130
Hamilton	127	246	204	638
Hernando	88	260	54	156
Hillsborough	61	60	92	129
Holmes	44	10	147	12
Jackson	546		454	560
Jefferson	517	68	159	229
Lafayette	931	1,576	674	1,743
Lake				
Lee	203	256	137	406
Leon	1,020	145	1,136	1,877
Levy				
Liberty	25	101	25	26
Madison	1,556	144	1,698	1,698
Manatee				
Marion	2,046	684	2,179	3,321
Monroe	259	283	175	472
Nassau	31	40	24	54
Okaloosa	5		5	15
Orange				
Osceola				
Palm Beach	901	417	381	758
Pasco	144	99	60	335
Pinellas				
Polk	1,076	680	791	2,391
Putnam	655	608	464	1,083
Santa Rosa	22		12	51
Seminole	1,299	24	1,022	2,187
St. Johns				
St. Lucie				
Sumter				
Swansee	412	30	437	509
Taylor	49	41	75	185
Volusia	652	60	1,153	1,894
Wakulla	11	4	6	12
Walton	326	410	158	4,555
Washington	13	127	5	85
Totals	25,316	45,405	19,203	\$ 50,181

*Not reported.

TABLE No. 3—FRUIT PRODUCTS—Continued.

COUNTIES	PEACHES			
	Bear- ing Trees	Non- Bearing Trees	Bushels	Value
Alachua	177	204	228	\$ 300
Baker	108	130,002	144	310
Bay	147	374	238	238
Bradford	1,854	3,236	581	1,160
Brevard	116	518	97	154
Broward				
Calhoun	2,163	1,522	2,027	3,137
Citrus	2,320	2,873	2,965	7,757
Clay	5,368	756	2,136	3,004
Columbia	1,728	186	1,268	1,578
Dade	57	31	6	18
DeSoto	15	2	15	15
Duval	2,033	2,924	2,009	14,212
Escambia	5,959	26,723	3,683	5,873
Franklin	2,357	1,330	2,714	3,418
Gadsden	2,064	978	2,416	2,416
Hamilton	327	234	1,006	2,101
Hernando	861	1,981	1,231	1,562
Hillsborough	4,006	2,668	3,909	7,880
Holmes	1,438	278	1,543	1,675
Jackson	219	17	202	871
Jefferson	9	9	20	20
Lafayette	2,083	1,048	731	952
Lake	3,404	19,418	3,450	5,085
Lee	16	26	10	26
Leon	3,023	1,072	2,527	2,527
Levy	489	383	370	486
Liberty	741	331	284	1,034
Madison				
Manatee	1,500	18	20	40
Marion	5,619	10	5,752	5,231
Monroe*				
Nassau	3,794	3,890	3,460	5,356
Okaloosa	4,295	3,859	2,756	3,470
Orange	1,215	641	637	1,133
Osceola	736	162	280	487
Palm Beach	5	64	2	4
Pasco	3,176	4,538	2,209	3,791
Pinellas	264	551	134	280
Polk	34	403	32	63
Putnam	7,744	4,310	4,180	8,968
Santa Rosa	2,353	8,905	3,034	3,646
Seminole	15		12	92
St. Johns	7,944	1,558	3,987	7,974
St. Lucie	33	202	18	45
Sumter				
Suwannee	1,316	309	1,365	1,675
Taylor	835	897	3,451	3,476
Volusia	30,479	4,995	17,429	16,474
Wakulla	147	115	139	139
Walton	4,297	3,582	2,624	2,646
Washington	494	170	473	620
Totals.....	119,408	238,181	87,864	\$ 131,145

*Not reported.

TABLE No. 3—FRUIT PRODUCTS—Continued.

COUNTIES	PLUMS			
	Bear- ing Trees	Non- Bearing Trees	Bushels	Value
Alachua				\$
Baker	5	20,000	4	8
Bay		117		
Bradford	49		78	171
Brevard	100		50	100
Broward				
Calhoun	22	304	13	89
Citrus	395	129	435	1,244
Clay	361	138	121	245
Columbia	975		601	601
Dade				
DeSoto	15	14	35	35
Duval	1,868	1,711	2,211	10,790
Escambia	1,269	852	1,316	1,407
Franklin	418	318	555	558
Gadsden	190	124	409	407
Hamilton	32	34	129	218
Hernando	96	2,419	131	182
Hillsborough	1,247	859	851	1,756
Holmes	460	235	96	96
Jackson				
Jefferson	2		10	10
Lafayette	461	419	177	423
Lake	46	26	87	183
Lee	2	25	1	2
Leon	208	96	228	180
Levy	57	4	11	20
Liberty				
Madison				
Manatee	10		6	15
Marion	40		25	33
Monroe*				
Nassau	1,916	1,419	2,032	3,140
Okaloosa	863	163	484	594
Orange		80		
Osceola				
Palm Beach				
Pasco	916	741	1,028	1,220
Pinellas	5	83	3	10
Polk	1	17	1	2
Putnam	221	1,365	140	260
Santa Rosa	190	953	225	410
Seminole				
St. Johns	561	109	555	1,110
St. Lucie				
Sumter	100		50	50
Suwannee	243	34	667	234
Taylor	23	4	58	130
Volusia	240	40	140	175
Wakulla				
Wallon	183	78	108	128
Washington	26	14	8	33
Totals	13,915	32,924	13,077	\$ 26,269

*Not reported.

TABLE No. 3—FRUIT PRODUCTS—Continued.

COUNTIES	GRAPEVINES			
	GRAPES		WINES	
	Pounds	Value	Gallons	Value
Alachua	1,150	140		\$ 240
Baker	1,045	83	200	240
Bay	3,085	268	255	507
Bradford	44,215	4,947		
Brevard	4,550	880		
Broward				
Calhoun	34,930	491	270	604
Citrus	1,011	120	7	7
Clay	51,512	1,600	50	70
Columbia	156,714	2,042	50	100
Dade				
DeSoto				
Duval	77,218	8,061	495	753
Escambia	13,780	984	686	1,372
Franklin	1,052	52		
Gadsden	98,605	4,333	3	3
Hamilton	5,720	205	130	65
Hernando	7,265	400		
Hillsborough	27,495	2,788	176	350
Holmes	10,860	3,350	5	5
Jackson				
Jefferson	637	71		
Lafayette	5,090	534	27	16
Lake	10,734	905	67	83
Lee	760	76		
Leon	18,350	1,840	30	60
Levy	11,316	494		
Liberty	100	20		
Madison				
Manatee	150	10		
Marion	2,362	392		
Monroe*				
Nassau	108,008	4,904	111	222
Okaloosa	60,740	1,835	116	222
Orange	6,070	607	600	600
Osceola	50	10		
Palm Beach	681	90		
Pasco	6,133	838	761	725
Pinellas	1,200	140		
Polk	337	121		
Putnam	54,350	3,094		
Santa Rosa	13,945	887	60	90
Seminole	7,820	920	300	600
St. Johns	430,630	43,063	17,550	17,550
St. Lucie	2,295	219		
Sumter				
Suwannee	7,480	230	152	161
Taylor	4,557	360	90	90
Volusia	73,800	1,845		
Wakulla				
Walton	77,350	2,717	65	65
Washington	2,482	345		
Totals	1,532,765	96,998	22,255	\$ 23,590

*Not reported.

TABLE No. 3—FRUIT PRODUCTS—*Continued.*

COUNTIES	FIGS			
	Bear- log Trees	Non- Bearing Trees	Crates	Value
Alachua	47	80	708	287
Baker	23	2,503	200	200
Bay	27	223	68	32
Bradford	6	3	5	16
Brevard	3		1	4
Broward		47		
Calhoun	104	10	823	479
Clarus	20		21	45
Clay	85	206	57	145
Columbia	252	66	1	2
DeSoto				
Duval	2,004	080	2,400	10,841
Escambia	2,093	415	2,336	2,205
Franklin	1,148	429	450	484
Gadsden	209		1,405	1,405
Hamilton	158	88	316	316
Hernando	73	520	93	133
Hillsborough	786	227	700	1,518
Holmes	399	21	430	430
Jackson				
Jefferson				
Lafayette	102		99	154
Lake	154	108	260	573
Lee	10	1	10	10
Leon	2,370	397	2,504	2,696
Levy	57	8	77	83
Liberty				
Madison				
Manatee				
Marion	26		23	56
Monroe*				
Nassau	488	2,323	405	517
Okaloosa	1,097	50	2,625	1,841
Orange				
Osceola	2	6	3	500
Palm Beach	4	94	2	5
Pasco	12	21	20	59
Pineillas		7		
Polk	2	5	2	2
Pulnam	101	20	209	405
Santa Rosa	106	33	67	136
Seminole				
St. Johns	733	1,585	708	1,736
St. Lucie	40	103	8	16
Sumter	3		5	5
Suwannee	79	50	1,502	492
Taylor	5		20	10
Volusia	1,770		2,385	3,479
Wakulla				
Walton	972	103	564	349
Washington	82	18	63	129
Totals.....	16,546	10,618	21,088	\$ 31,930

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16.

COUNTIES	HORSES (On Hand July 1, 1916)	
	Number	Value
Alachua	4,092	\$ 473,651
Baker	414	47,455
Bay	231	27,245
Bradford	1,619	160,430
Brevard	241	28,650
Broward	140	18,915
Calhoun	454	40,505
Citrus	411	45,590
Clay	345	28,085
Columbia	961	129,405
Dade	472	72,010
DeSoto	2,227	235,010
Duval	2,513	291,355
Escambia	1,811	160,476
Franklin	127	19,050
Gadsden	2,062	151,555
Hamilton	925	118,330
Hernando	564	61,140
Hillsborough	5,220	377,525
Holmes	419	42,875
Jackson	2,310	255,215
Jefferson	769	90,815
Lafayette	607	86,640
Lake	968	99,818
Lee	508	65,720
Leon	1,657	181,190
Levy	1,275	115,115
Liberty	276	32,340
Madison	1,167	126,690
Manatee	1,145	125,414
Marion	2,871	305,150
Monroe*		
Nassau	369	50,405
Okaloosa	388	34,363
Orange	1,169	141,551
Osceola	1,238	96,990
Palm Beach	251	42,385
Pasco	1,083	86,849
Pinellas	483	59,065
Polk	1,314	137,605
Putnam	1,804	226,777
Santa Rosa	992	83,809
Seminole	510	60,725
St. Johns	1,294	169,100
St. Lucie	342	40,910
Sumter	1,041	96,940
Suwannee	1,544	174,358
Taylor	396	45,005
Volusia	1,745	142,720
Wakulla	413	43,495
Walton	648	64,100
Washington	720	58,172
Totals.....	56,530	\$ 5,875,245

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	COLTS	
	(On Hand July 1, 1916)	
	Number	Value
Alachua	311	\$ 18,495
Baker	10	1,010
Bay	2	140
Bradford	84	5,603
Brevard	16	913
Broward		
Calhoun	26	1,830
Citrus	59	3,225
Clay	3	133
Columbia	27	1,695
Dade	3	175
DeSoto	43	1,056
Duval	40	3,030
Escambia	106	4,270
Franklin	2	150
Gadsden	94	5,135
Hamilton	15	920
Hernando	42	2,415
Hillsborough	51	2,103
Holmes	9	445
Jackson	128	5,905
Jefferson	43	3,845
Lafayette	35	2,350
Lake	29	930
Lee	21	1,310
Leon	150	7,940
Levy	214	80,040
Liberty	8	615
Madison	18	1,200
Monroe	30	1,915
Marion	353	18,270
Monroe*		
Nassau	6	330
Okaloosa	25	1,235
Orange	55	3,900
Osceola	72	2,060
Palm Beach		
Pasco	46	2,355
Pinellas	10	670
Polk	29	1,840
Pulham	7	725
Santa Rosa	53	1,542
Seminole	7	635
St. Johns	11	720
St. Lucie	27	2,215
Sumter	203	8,900
Suwannee	42	2,454
Taylor	"	100
Volusia	18	845
Wakulla	14	925
Walton	20	995
Washington	15	910
Totals	2,643	\$ 211,678

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	MULES	
	(On Hand July 1, 1916)	
	Number	Value
Alachua	1,834	\$ 369,821
Baker	497	86,880
Bay	371	55,480
Bradford	1,227	171,230
Brevard	179	32,155
Broward	162	24,556
Calhoun	570	85,515
Citrus	145	27,858
Clay	115	16,305
Columbia	1,096	185,073
Dade	662	150,840
DeSoto	1,181	212,960
Duval	815	126,120
Escambia	683	102,802
Franklin	98	19,600
Gadsden	1,126	181,205
Hamilton	1,113	162,470
Hernando	246	37,635
Hillsborough	1,123	201,206
Holmes	1,336	155,735
Jackson	4,881	490,527
Jefferson	1,821	251,360
Lafayette	583	109,305
Lake	800	153,065
Lee	276	48,055
Leon	1,462	224,220
Levy	256	37,500
Liberty	176	19,001
Madison	1,779	234,600
Manatee	881	63,700
Marion	876	162,210
Monroe*		
Nassau	299	48,350
Ocala	715	85,905
Okaloosa	676	137,054
Orange	183	27,490
Osceola	263	69,930
Palm Beach	258	35,529
Pasco	350	58,600
Pinellas	488	62,580
Polk	822	110,005
Putnam	726	94,730
Santa Rosa	869	64,375
Seminole	1,348	47,065
St. Johns	286	46,465
St. Lucie	359	60,025
Sumter	1,820	248,416
Suwannee	562	74,160
Taylor	1,033	115,470
Volusia	351	58,580
Wakulla	940	122,330
Walton	790	83,037
Washington		
Totals.....	40,616	\$ 5,796,918

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	MULE COLTS (On Hand July 1, 1916)	
	Number	Value
Alachua	63	\$ 5,430
Baker	1	100
Bay	1	25
Bradford	36	2,740
Brevard	1	150
Broward		
Calhoun	8	825
Citrus	3	400
Clay	2	20
Columbia	23	1,865
Dade		
DeSoto	3	200
Duval	30	4,525
Escambia	18	960
Franklin	1	75
Gadsden	30	3,070
Hamilton	9	650
Hernando	3	225
Hillsborough	8	740
Holmes	7	655
Jackson	65	4,275
Jefferson	45	4,625
Lafayette	6	545
Lake	1	10
Lee	4	210
Leon	22	2,635
Levy	19	1,445
Liberty	5	450
Madison	1	50
Manatee	16	1,730
Marion	22	2,000
Monroe*		
Nassau	1	200
Okaloosa	4	200
Orange	7	1,350
Osceola	2	125
Palm Beach		
Pasco	7	875
Pinellas		
Polk	7	875
Pinellas		
Polk	51	5,705
Putnam	4	1,000
Santa Rosa	1	25
Seminole		
St. Johns		
St. Lucie	1	200
Sumter		
Suwannee	37	4,405
Taylor	7	505
Volusia	4	210
Wakulla	2	300
Walton	20	2,250
Washington	11	875
Totals.....	610	\$ 58,565

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	ASSES AND JENNETS (On Hand July 1, 1916)	
	Number	Value
Alachua	7	\$ 1,300
Baker	1	50
Bay		
Bradford	3	1,550
Brevard	7	130
Broward	1	50
Calhoun		
Citrus	6	350
Clay	1	25
Columbia	3	125
Dade	7	72
DeSoto	10	620
Duval	32	650
Escambia	6	600
Franklin	2	100
Gadsden	5	305
Hamilton	5	250
Hernando	1	250
Hillsborough	7	450
Holmes		
Jackson	6	400
Jefferson	1	400
Lafayette	8	400
Lake	2	75
Lee		
Leon	5	490
Levy	8	540
Liberty	1	175
Madison		
Manatee	6	155
Marion	2	125
Monroe*		
Nassau	26	275
Okaloosa	2	575
Orange	1	30
Osceola	4	400
Palm Beach		
Pasco	2	220
Pinellas	1	300
Polk	3	100
Putnam	5	300
Santa Rosa	3	650
Seminole	2	250
St. Johns	76	2,665
St. Lucie	2	50
Sumter	2	225
Suwannee	4	540
Taylor	1	100
Volusia	6	375
Wakulla	2	100
Walton	3	225
Washington	2	85
Totals	288	\$ 16,882

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	WORK OXEN	
	(On Hand July 1, 1916)	
	Number	Value
Alachua	73	\$ 3,575
Baker	27	1,050
Bay	451	24,535
Bradford	28	860
Brevard	35	1,310
Broward		
Calhoun	451	17,627
Citrus	54	1,381
Clay	65	3,070
Columbia	11	460
Dade		
DeSoto	129	6,263
Duval	662	10,425
Escambia	383	32,116
Franklin	94	7,820
Gadsden	215	6,994
Hamilton	10	500
Hernando	5	235
Hillborough	41	1,220
Holmes	221	10,611
Jackson	305	8,949
Jefferson	473	8,045
Lafayette	30	1,070
Lake	28	875
Lee	62	3,590
Leon	615	23,800
Levy	62	1,205
Liberty	96	3,393
Madison	30	1,500
Manatee	89	2,640
MMarion	52	1,050
Monroe*		
Nassau	325	13,170
Okaloosa	138	8,730
Orange	26	1,800
Osceola	34	1,100
Palm Beach	6	350
Pasco	51	2,435
Pinellas		
Polk	2	50
Putnam	62	4,800
Santa Rosa	1,235	21,298
Seminole		
St. Johns	49	3,450
St. Lucie	37	1,740
Sumler	6	235
Suwannee	17	368
Taylor	2	125
Volusia	8	500
Wakulla	110	3,795
Walton	458	11,745
Washington	422	12,107
Totals	7,785	\$ 279,277

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	STOCK CATTLE <i>Native Breeds, All Ages</i> (On Hand July 1, 1916)	
	Number	Value
Alachua	42,715	\$ 588,510
Baker	11,580	163,363
Bay	1,165	17,025
Bradford	26,142	321,632
Brevard	12,256	223,255
Broward	9	330
Calhoun	8,914	98,480
Citrus	11,886	105,228
Clay	7,671	74,768
Columbia	11,248	124,122
Dade	7	250
DeSoto	152,981	1,118,590
Duval	22,812	280,529
Escambia	7,120	123,918
Franklin	2,195	65,650
Gadsden	7,190	89,239
Hamilton	10,225	114,435
Hernando	8,280	104,810
Hillsborough	26,657	388,474
Holmes	7,810	92,285
Jackson	24,702	215,838
Jefferson	7,407	110,835
Lafayette	19,891	264,432
Lake	17,376	120,835
Lee	27,677	489,325
Leon	5,795	61,110
Levy	21,276	212,770
Liberty	4,395	38,474
Madison	8,647	104,641
Manatee	81,246	329,760
Marion	25,603	266,512
Monroe*		
Nassau	13,104	173,790
Okaloosa	5,080	62,585
Orange	14,873	278,690
Osceola	94,800	1,265,630
Palm Beach	562	7,156
Pasco	13,426	195,204
Pinellas	1,656	24,995
Polk	30,660	384,148
Putnam	19,539	298,070
Santa Rosa	8,989	118,417
Seminole	8,246	78,535
St. Johns	42,653	639,795
St. Lucie	11,770	246,161
Sumter	13,117	133,170
Suwannee	11,650	113,739
Taylor	19,950	190,886
Volusia	35,545	538,175
Wakulla	5,881	68,034
Walton	10,625	107,595
Washington	7,637	85,811
Totals.....	940,721	\$ 11,809,481

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	THOROUGHBRED CATTLE, Including % Grades and Up—All Ages. (On Hand July 1, 1916)	
	HEREFORD AND GRADES.	
	Number	Value
Alachua	207	\$ 6,850
Baker	5	205
Bay	3	125
Bradford	67	2,150
Brevard	18	1,385
Broward	2	80
Calhoun	53	1,375
Citrus	15	340
Clay		
Columbia	18	540
Dade	18	2,400
DeSoto	15	530
Duval	119	1,885
Escambia	4	210
Franklin		
Gadsden	51	960
Hamilton	11	700
Hernando		
Hillsborough	28	1,490
Holmes	78	3,360
Jackson	19	580
Jefferson		
Lafayette	96	2,150
Lake	7	635
Lee		
Leon	3	45
Levy	221	618
Liberty	42	1,350
Madison		
Manatee		
Marion	34	2,150
Monroe*		
Nassau	2	300
Okaloosa	11	280
Orange		
Osceola	35	1,275
Palm Beach		
Pasco	521	5,250
Pinellas	1	50
Polk	239	3,535
Putnam		
Santa Rosa	37	2,585
Seminole		
St. Johns		
St. Lucie		
Suwannee	70	4,580
Taylor		
Volusia		
Wakulla		
Walton	50	885
Washington	35	685
Totals,	2,181	\$ 51,518

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	THOROUGHbred CATTLE, Including ¾ Grades and Up—All Ages. (On Hand July 1, 1916)	
	SHORTHORN AND GRADES.	
	Number	Value
Alachua	39	\$ 2,280
Baker		
Bay		
Bradford	5	400
Brevard	1	50
Broward	2	155
Calhoun		
Citrus	1	75
Clay		
Columbia	35	1,080
Dade	1	75
DeSoto		
Duval	19	695
Escambia	2	165
Franklin		
Gadsden	1	35
Hamilton	6	390
Hernando		
Hillsborough	2	140
Holmes		
Jackson		
Jefferson		
Lafayette	4	165
Lake	9	440
Lee		
Leon	1	25
Levy	10	350
Liberty		
Madison		
Manatee		
Marion	317	14,050
Monroe*		
Nassau		
Okaloosa		
Orange		
Osceola	20	2,070
Palm Beach	2	150
Pasco		
Pinellas		
Polk		
Putnam	44	3,150
Santa Rosa	3	175
Seminole	30	600
St. Johns	500	7,500
St. Lucie		
Sumter		
Suwannee	4	170
Taylor	8	700
Volusia		
Wakulla		
Walton	16	247
Washington	70	635
Totals	1,152	\$ 25,477

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	THOROUGHbred CATTLE, Including % Grades and Up—All Ages. (On Hand July 1, 1916)	
	DEVON AND GRADES.	
	Number	Value
Alachua	1	\$ 50
Baker	1	100
Bay		
Bradford	8	250
Brevard		
Broward		
Calhoun		
Citrus		
Clay		
Columbia		
Dade		
DeSoto	8	400
Duval	1	25
Escambia	9	270
Franklin		
Gadsden		
Hamilton		
Hernando		
Hillsborough		
Holmes		
Jackson		
Jefferson		
Lafayette	1	40
Lake		
Lee		
Leon		
Levy	8	230
Liberty		
Madison		
Manatee		
Marion		
Monroe*		
Nassau	20	500
Okaloosa		
Orange		
Osceola	101	2,550
Palm Beach		
Pasco	23	230
Pinellas		
Polk		
Putnam		
Santa Rosa	1	40
Seminole		
St. Johns		
St. Lucie	3	300
Sumter		
Suwannee		
Taylor		
Volusia		
Wakulla		
Walton		
Washington		
Totals.....	183	\$ 4,985

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	THOROUGHBRED CATTLE, Including $\frac{1}{2}$ Grades and Up—All Ages. (On Hand July 1, 1916)	
	ABERDEEN, ANGUS POLLED AND GRADES.	
	Number	Value
Alachua	15	\$ 300
Baker		
Bay		
Bradford		
Brevard		
Broward		
Calhoun		
Citrus		
Clay		
Columbia		
Dade		
DeSoto		
Duval	3	125
Escambia	1	100
Franklin		
Gadsden		
Hamilton		
Hernando		
Hillsborough	3	200
Holmes		
Jackson		
Jefferson		
Lafayette		
Lake	1	125
Lee	2	250
Leon		
Levy		
Liberty		
Madison		
Manatee		
Marion		
Monroe*		
Nassau		
Okaloosa		
Orange		
Osceola	2,562	80,000
Palm Beach	52	4,700
Pasco	9	270
Piellina		
Polk		
Putnam		
Santa Rosa	1	150
Seminole	2	400
St. Johns		
St. Lucie	1	60
Sumter		
Suwannee		
Taylor		
Volusia		
Wakulla		
Walton		
Washington		
Totals.....	2,672	\$ 86,680

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	THOROUGHBRED CATTLE, Including $\frac{3}{4}$ Grades and Up—All Ages. (On Hand July 1, 1916)	
	GUERNSEY AND GRADES.	
	Number	Value
Alachua	63	\$ 2,876
Baker		
Bay	15	940
Bradford	5	130
Brevard	9	850
Broward	1	100
Calhoun	7	230
Citrus	10	210
Clay		
Columbia		
Dade	163	10,970
DeSoto	8	335
Duval	14	560
Escambia	37	1,770
Franklin	20	800
Gadsden	236	1,855
Hamilton	4	200
Hernando	3	100
Hillsborough	8	815
Holmes	2	50
Jackson	7	34
Jefferson		
Lafayette		
Lake	28	1,310
Lee		
Leon	35	585
Levy	1	75
Liberty		
Madison		
Manatee	34	925
Marion		
Monroe*	2	180
Nassau		
Okaloosa		
Orange		
Osceola	20	700
Palm Beach	1	30
Pasco	37	1,995
Pinellas	4	365
Polk	14	890
Putnam	15	1,125
Santa Rosa	8	405
Seminole		
St. Johns		
St. Lucie	1	30
Sumter		
Suwannee	10	370
Taylor		
Volusia		
Wakulla	12	310
Walton	75	1,880
Washington	1	10
Totals.....	910	\$ 33,510

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	THOROUGHBRED CATTLE, Including $\frac{1}{2}$ Grades and Up—All Ages. (On Hand July 1, 1916)	
	JERSEY AND GRADES.	
	Number	Value
Alachua	1,781	\$ 78,148
Baker	136	4,765
Bay		
Bradford	440	18,775
Brevard	524	15,740
Broward	28	2,015
Calhoun	80	1,784
Citrus	298	11,383
Clay	20	1,157
Columbia	91	2,990
Dade	643	50,148
DeSoto	139	7,070
Duval	974	31,818
Escambia	886	39,133
Franklin	11	440
Gadsden	1,285	38,361
Hamilton	33	1,350
Hernando	336	10,822
Hillsborough	1,039	53,855
Holmes	152	5,072
Jackson	198	5,680
Jefferson	330	13,265
Lafayette	37	1,200
Lake	895	31,403
Lee	185	9,845
Leon	659	14,176
Levy	155	6,745
Liberty	59	920
Madison	31	1,020
Manatee	200	10,000
Marion	506	26,435
Monroe*		
Nassau	85	5,010
Ocala	153	8,260
Orange	467	16,313
Osceola	38	1,730
Palm Beach	111	7,075
Pasco	302	16,488
Pinellas	582	36,730
Polk	563	32,691
Putnam	129	10,630
Santa Rosa	325	12,601
Seminole	27	1,760
St. Johns	64	2,155
St. Lucie	153	5,670
Sumter	127	5,310
Swansee	267	10,814
Taylor	219	7,899
Volusia		
Wakulla	81	2,160
Walton	184	6,625
Washington	85	2,840
Totals	15,858	\$ 683,921

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	THOROUGHBRED CATTLE, Including $\frac{1}{2}$ Grades and Up—All Ages. (On Hand July 1, 1916)	
	HOLSTEIN AND GRADES.	
	Number	Value
Alachua	26	\$ 2,000
Baker	3	110
Bay .....	.....	.....
Bradford	65	2,100
Brevard	1	75
Broward	83	2,765
Calhoun .....	.....	.....
Citrus	40	1,175
Clay .....	.....	.....
Columbia	63	2,155
Dade	321	10,790
DeSoto	1	40
Duval	60	3,500
Escambia	92	4,245
Franklin .....	.....	.....
Gadsden	8	280
Hamilton	2	100
Hernando	4	140
Hillsborough	5	425
Holmes	11	370
Jackson	1	50
Jefferson	21	825
Lafayette	3	90
Lake	144	9,033
Lee .....	.....	.....
Leon	3	103
Ley	4	40
Liberty	5	200
Madison .....	.....	.....
Manatee .....	.....	.....
Marion	16	965
Monroe* .....	.....	.....
Nassau	08	1,730
Okaloosa	14	405
Orange .....	.....	.....
Osceola	2	100
Palm Beach	345	12,080
Pasco	20	730
Pinellas	14	1,420
Polk	8	600
Putnam	6	600
Santa Rosa	23	970
Seminole	4	400
St. Johns	47	2,210
St. Lueie	5	130
Sumter	8	400
Suwannee	30	1,685
Taylor	23	615
Volusia .....	.....	.....
Wakulla	5	140
Walton	7	140
Washington	8	340
Totals.....	1,565	\$ 72,830

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	COWS Kept for Milk Only. (On Hand July 1, 1916)	
	Number	Value
Alachua	1,329	\$ 68,617
Baker	79	3,506
Bay	189	6,501
Bradford	264	10,810
Brevard	19	480
Broward	75	8,809
Calhoun	266	6,801
Citrus	530	7,545
Clay	252	16,396
Columbia	1,877	33,240
Dade	533	53,789
DeSoto	140	7,585
Duval	3,412	190,081
Escambia	1,404	62,333
Franklin	807	12,280
Gadsden	1,162	41,008
Hamilton	2,173	70,105
Hernando	188	7,705
Hillsborough	3,881	228,536
Holmes	1,741	46,511
Jackson	2,401	49,083
Jefferson	139	5,335
Lafayette	877	18,625
Lake	571	27,983
Lee	406	23,886
Leon	4,319	132,011
Lery	91	4,540
Liberty	239	8,120
Madison	512	13,465
Manatee	214	11,015
Marion	906	49,995
Monroe*		
Nassau	644	25,410
Okaloosa	1,835	44,517
Orange	1,408	80,435
Osceola	428	21,039
Palm Beach	246	13,026
Pasco	731	28,717
Pinellas	680	43,660
Polk		
Putnam	814	55,300
Santa Rosa	1,268	31,525
Seminole	156	8,300
St. Johns	979	54,455
St. Lucie	338	21,990
Sumter	46	1,115
Suwannee	605	10,450
Taylor	214	7,078
Volusia	125	80,400
Wakulla	59	1,003
Walton	866	23,590
Washington	132	2,503
Totals.....	41,940	\$ 1,782,044

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	CATTLE Movement During Period—All Ages. Purchased.	
	Number	Value
Alachua	5,294	\$ 55,109
Baker	102	1,035
Bay	322	3,787
Bradford	1,201	17,295
Brevard .....	.....	.....
Broward	3	240
Calhoun	140	1,404
Citrus	4,339	73,014
Clay	325	4,809
Columbia	497	5,574
Dade	1,131	37,170
DeSoto	86	1,125
Duval	1,159	23,775
Escambia	494	7,428
Franklin	2,074	62,220
Gadsden	158	4,174
Hamilton	346	4,890
Hernando .....	.....	.....
Hillsborough	16,948	289,525
Holmes	816	11,413
Jackson	1,371	13,405
Jefferson	1,098	12,065
Lafayette	12	180
Lake	4,208	83,295
Lee	2,023	16,494
Leon	2,973	31,452
Levy	524	18,175
Liberty	1,011	12,526
Madison	104	1,090
Manatee	802	10,460
Marion	366	5,545
Monroe .....	.....	.....
Nassau	77	1,183
Okaloosa	434	6,758
Orange	1,825	25,400
Osceola	2,275	41,830
Palm Beach	1,186	20,500
Pasco	816	13,277
Pinellas	825	17,995
Polk .....	.....	.....
Putnam	1,445	26,515
Santa Rosa	1,083	16,270
Seminole .....	.....	.....
St. Johns	1,550	48,250
St. Lucie	3,091	54,115
Sumter .....	.....	.....
Suwannee	383	4,988
Taylor	300	3,636
Volusia .....	.....	.....
Wakulla	13	115
Walton	201	2,216
Washington	305	4,245
Totals	65,145	\$ 1,094,826

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	CATTLE Movement During Period—All Ages. Sold Living (Local Use)	
	Number	Value
Alachua	2,798	\$ 67,680
Baker	37	810
Bay	174	2,038
Bradford	1,570	33,993
Brevard .....	.....	.....
Broward	18	1,817
Calhoun	422	7,422
Citrus	5,114	148,200
Clay	186	2,405
Columbia	1,442	19,017
Dade	41	2,588
DeSoto	5,797	87,101
Duval	128	3,827
Escambia	205	5,388
Franklin	329	9,870
Gadsden	448	9,207
Hamilton	369	5,510
Hernando .....	.....	.....
Hillsborough	690	11,379
Holmes	1,249	28,645
Jackson	1,817	20,579
Jefferson	711	10,459
Lafayette	26	441
Lake	1,488	36,860
Lee	2,160	33,400
Leon	771	16,643
Levy	992	15,369
Liberty	1,255	16,036
Madison	155	1,540
Manatee	2,210	33,955
Marion	486	10,344
Monroe*	.....	.....
Nassau	309	6,055
Okaloosa	1,290	21,813
Orange	1,159	24,470
Osceola	3,228	69,401
Palm Beach	3,142	62,015
Peace	1,408	23,040
Pinellas	67	3,513
Polk .....	.....	.....
Putnam	178	4,505
Santa Rosa	1,220	21,339
Seminole .....	.....	.....
St. Johns	3,874	105,020
St. Lucie	351	5,780
Sumter	826	12,965
Suwannee	1,258	17,644
Taylor	338	3,537
Volusia .....	.....	.....
Wakulla	816	9,510
Walton	343	5,414
Washington	534	8,862
Totals	52,801	\$ 1,047,437

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	CATTLE Movement During Period—All Ages. Slaughtered (for Home Use)	
	Number	Value
Alachua	3,931	\$ 57,694
Baker	77	2,040
Bay	146	2,835
Bradford	235	4,828
Brevard		
Broward	1	10
Calhoun	10	116
Citrus	1,434	22,865
Clay	215	3,887
Columbia	82	1,046
Dade	1,037	41,980
DeSoto	740	13,040
Duval	176	4,955
Escambia	202	3,423
Franklin	2,125	63,750
Gadsden	165	3,122
Hamilton	32	510
Hernando		
Hillsborough	11,658	301,140
Holmes	51	950
Jackson	221	2,200
Jefferson	194	3,356
Lafayette	1,020	12,303
Lake	2,461	70,225
Lee	125	1,600
Leon	2,549	31,703
Levy	60	781
Liberty	271	4,891
Madison	0	00
Manatee	1,114	17,750
Marion	160	2,775
Monroe*		
Nassau	37	732
Okaloosa	127	2,260
Orange	1,235	29,510
Osceola	1,329	30,580
Palm Beach	102	1,836
Pasco	1,243	19,254
Pinellas	698	17,110
Polk		
Putnam	1,785	49,350
Santa Rosa	160	3,757
Seminole		
St. Johns	3,669	41,625
St. Lucie	4,001	80,012
Sumter		
Suwannee	307	4,451
Taylor	12	230
Volusia		
Wakulla		
Walton	14	330
Washington	69	1,150
Totals	45,320	\$ 956,304

*Not reported.

TABLE No. 4--LIVE STOCK ON HAND, 1915-16--Continued.

COUNTIES	CATTLE Movement During Period--All Ages. Exported Living.	
	Number	Value
Alachua	886	\$ 19,050
Baker		
Bay	15	215
Bradford		
Brevard		
Broward		
Calhoun	5	110
Citrus	9	120
Clay		
Columbia		
Dade		
DeSoto		
Duval		
Escambia	505	8,398
Franklin		
Gadsden	5	95
Hamilton		
Hernando		
Hillsborough		
Holmes		
Jackson	500	6,990
Jefferson	427	7,020
Lafayette		
Lake		
Lee		
Leon		
Levy	196	1,590
Liberty	22	440
Madison		
Manatee	1,500	27,000
Marion	150	3,000
Monroe*		
Nassau		
Okaloosa		
Orange		
Osceola	4,200	60,800
Palm Beach		
Pasco	28	460
Pinellas		
Polk		
Putnam		
Santa Rosa	563	10,191
Seminole		
St. Johns	2	30
St. Lucie	4	40
Sumter	20	500
Suwannee		
Taylor	428	6,291
Volusia		
Wakulla		
Walton		
Washington		
Totals	9,465	\$ 182,250

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	CATTLE Movement During Period—All Ages. Died of Disease.	
	Number	Value
Alachua	75	\$ 790
Baker	7	130
Bay	14	215
Bradford	18	30
Brevard		
Broward	5	445
Calhoun	171	1,792
Citrus	322	2,108
Clay	22	325
Columbia	60	680
Dade	16	980
DeSoto	30	326
Duval	6	170
Escambia	44	672
Franklin	11	330
Gadsden	84	1,585
Hamilton	74	959
Hernando		
Hillsborough	64	1,635
Holmes	108	1,808
Jackson	165	7,005
Jefferson	33	405
Lafayette		
Lake	113	1,230
Lee		
Leon	123	2,333
Levy	258	1,641
Liberly	104	673
Madison	16	246
Manatee		
Marion	25	250
Monroe*		
Nassau	39	810
Okaloosa	205	2,379
Orange	13	230
Osceola	164	2,460
Palm Beach	41	750
Pasco	583	4,204
Pineillas	35	730
Polk		
Putnam	45	675
Santa Rosa	182	2,005
Seminole		
St. Johns	54	810
St. Lucie	130	1,350
Sumter	2	40
Suwannee	244	2,224
Taylor	11	50
Volusia		
Wakulla	42	473
Wallon	28	309
Washington	57	1,118
Totals	3,830	\$ 50,976

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	CATTLE Movement During Period—All Ages. Died of Exposure to Weather.	
	Number	Value
Alachua	362	\$ 3,598
Baker		
Bay	2	25
Bradford	19	325
Brevard		
Broward		
Calhoun	87	885
Citrus	110	430
Clay	253	1,074
Columbia	60	780
Dade		
DeSoto		
Duval	205	2,985
Escambia	44	643
Franklin	3	30
Gadsden	33	521
Hamilton	41	485
Hernando		
Hillsborough		
Holmes	5	48
Jackson	309	3,092
Jefferson		
Lafayette	2	25
Lake	50	680
Lee		
Leon	11	99
Levy	455	4,300
Liberty	8	160
Madison	22	285
Manatee	24	112
Marlton	174	960
Monroe*		
Nassau	104	1,405
Okaloosa	2	30
Orange	50	500
Osceola	2,341	34,515
Palm Beach		
Pasco	152	1,206
Pinellas	15	180
Polk	161	2,385
Putnam	70	683
Santa Rosa	81	1,190
Seminole		
St. Johns	386	4,740
St. Lucie	1	15
Sumter	30	450
Suwannee	142	467
Taylor	211	2,195
Volusia		
Wakulla		
Walton	1	12
Washington	1	7
Totals	6,036	\$ 71,550

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	HOGS—ALL AGES (On Hand July 1, 1916)	
	Number	Value
Alachua	52,322	\$ 172,848
Baker	17,034	40,295
Bay	8,222	6,821
Bradford	28,627	90,263
Brevard	1,740	7,755
Broward	500	5,420
Calhoun	22,864	61,665
Citrus	13,524	44,714
Clay	7,623	19,307
Columbia	29,812	78,515
Dade	985	8,964
DeSoto	19,878	45,083
Duval	17,197	80,921
Escambia	16,026	60,862
Franklin	3,623	21,738
Gadsden	25,926	91,111
Hamilton	24,349	59,492
Hernando	11,582	48,313
Hillsborough	33,601	126,736
Holmes	27,075	80,492
Jackson	56,976	136,976
Jefferson	26,277	98,803
Lafayette	31,839	97,095
Lake	15,298	61,410
Lee	6,952	13,152
Leon	24,925	81,877
Levy	27,264	60,333
Liberty	9,780	23,731
Madison	33,842	77,245
Manatee	4,888	14,564
Marion	44,727	156,521
Monroe*		
Nassau	13,347	58,077
Okaloosa	20,718	53,176
Orange	6,265	31,492
Osceola	14,119	37,736
Palm Beach	9,941	40,321
Pasco	14,951	41,298
Pinellas	2,374	11,829
Polk	9,123	21,198
Putnam	16,197	128,547
Santa Rosa	22,502	69,978
Seminole	2,170	16,315
St. Johns	26,383	251,738
St. Lucie	2,522	8,559
Sumter	17,683	54,564
Suwannee	44,462	124,639
Taylor	32,218	105,383
Volusia	29,517	89,358
Wakulla	14,452	29,187
Walton	25,591	61,628
Washington	18,183	54,250
Totals	982,966	\$ 3,262,213

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	HOGS Movement During Period—All Ages. Slaughtered for Pork.	
	Number	Value
Alachua	4,587	\$ 27,848
Baker	57	440
Bay	338	2,549
Bradford	2,362	14,092
Brevard	10	89
Broward	14	234
Calhoun	730	6,675
Citrus	1,894	15,590
Clay	481	2,401
Columbia	302	1,944
Dade	1,344	25,820
DeSoto	426	1,833
Duval	996	5,982
Escambia	1,403	9,650
Franklin	759	4,554
Gadsden	2,099	20,016
Hamilton	759	5,870
Hernando		
Hillborough	10,143	103,604
Holmes	516	4,332
Jackson	22,413	138,605
Jefferson	2,792	24,995
Lafayette	2,188	19,170
Lake	1,848	14,819
Lee	32	226
Leon	1,212	8,244
Levy	6,668	82,350
Liberty	2,793	29,274
Madison	71	615
Manatee	59	380
Marion	2,620	25,432
Monroe*		
Nassau	523	4,989
Okaloosa	7,813	63,053
Orange	2,213	17,952
Osceola	619	3,776
Palm Beach	3,734	32,278
Pasco	10,008	71,122
Pinellas	740	6,713
Polk	10	83
Putnam	5,184	74,154
Santa Rosa	964	7,475
Seminole		
St. Johns	4,348	44,087
St. Lucie	5,751	18,462
Sumter	923	6,615
Suwannee	855	5,145
Taylor	562	4,592
Volusia	5,005	90,758
Wakulla	841	3,687
Walton	145	987
Washington	892	8,591
Totals.....	122,914	\$ 1,011,713

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	HOGS Movement During Period—All Ages, Slaughtered for Bacon.	
	Number	Value
Alachua	15,877	\$ 183,532
Baker	2,980	26,946
Bay	373	2,072
Bradford	12,702	113,764
Brevard		
Broward		
Calhoun	983	9,888
Citrus	2,955	38,426
Clay	847	5,114
Columbia	15,819	109,440
Dade		
DeSoto	1,221	4,884
Duval	289	2,290
Escambia	3,649	35,155
Franklin		
Gadsden	12,685	180,846
Hamilton	14,265	126,031
Hernando		
Hillsborough	31	510
Holmes	8,422	95,104
Jackson	78,747	219,827
Jefferson	9,935	98,163
Lafayette	8,247	58,978
Lake	865	9,658
Lee		
Leon	8,887	76,620
Levy	6,247	67,207
Liberty	969	21,811
Madison	15,319	140,992
Manatee		
Marion	8,220	78,661
Monroe		
Nassau	54	590
Okaloosa		
Orange	10	200
Osceola	200	2,160
Palm Beach	52	587
Pasco	3,123	19,905
Pinellas	5	80
Polk	595	6,908
Putnam		
Santa Rosa	8,342	71,657
Seminole		
St. Johns	324	3,110
St. Lucie	18	130
Sumter	4,740	55,584
Suwannee	18,689	136,802
Taylor	6,419	79,707
Volusia		
Wakulla	2,138	27,181
Walton	4,426	49,601
Washington	3,800	36,725
Totals	281,242	\$ 2,188,740

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	HOGS Movement During Period—All Ages. Sold Living.	
	Number	Value
Alachua	5,968	\$ 37,282
Baker	48	145
Bay	304	1,452
Bradford	3,007	9,179
Brevard	35	65
Broward	33	368
Calhoun	274	727
Citrus	3,020	12,101
Clay	329	630
Columbia	4,599	20,923
Dade	122	910
DeSoto	200	490
Duval	411	1,830
Escambia	614	3,221
Franklin	59	354
Gadsden	579	1,629
Hamilton	410	1,206
Hernando		
Hillsborough	1,371	8,471
Holmes	1,371	8,471
Jackson	1,131	3,049
Jefferson	1,809	10,408
Lafayette	323	1,303
Lake	522	2,110
Lee	150	350
Leon	1,449	6,824
Levy	2,118	3,099
Liberty	451	4,511
Madison	1,287	8,300
Manatee	260	590
Marion	1,100	8,068
Monroe*		
Nassau	160	579
Okaloosa	948	3,408
Orange	593	3,732
Osceola	717	1,927
Palm Beach	285	2,650
Pasco	807	5,120
Pinellas	287	1,140
Polk	67	300
Putnam	311	2,903
Santa Rosa	1,251	4,798
Seminole		
St. Johns	371	3,635
St. Lucie	265	1,125
Sumter	504	3,087
Suwannee	1,279	4,805
Taylor	700	2,955
Volusia	307	43,420
Wekulla	491	1,318
Walton	582	1,515
Washington	79	316
Totals.....	51,915	\$ 259,090

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	HOGS Movement During Period—All Ages. Died of Disease.	
	Number	Value
Alachua	2,508	\$ 6,193
Baker	9	33
Bay	78	287
Bradford	1,247	3,882
Brevard	12	60
Broward	12	90
Calhoun	1,519	3,690
Citrus	2,588	11,082
Clay	423	754
Columbia	4,867	12,489
Dade	17	95
DeSoto	6	15
Duval	223	631
Escambia	3,163	9,219
Franklin	208	1,248
Gadsden	4,258	13,036
Hamilton	3,220	6,470
Hernando .....	.....	.....
Hillborough	418	1,788
Holmes	6,145	28,879
Jackson	14,917	31,433
Jefferson	2,075	10,408
Lafayette	905	1,421
Lake	668	2,137
Lee	1	5
Leon	2,355	7,490
Levy	1,876	4,532
Liberty	256	645
Madison	3,477	10,428
Manatee .....	.....	.....
Marion	1,105	3,625
Monroe* .....	.....	.....
Nassau	379	1,559
Okaloosa	1,870	3,998
Orange	186	1,342
Osceola	52	243
Palm Beach	43	245
Pasco	1,319	2,969
Pinellas	203	730
Polk	137	502
Putnam	828	3,867
Santa Rosa	3,127	12,895
Seminole .....	.....	.....
St. Johns	720	7,079
St. Lucie	12	130
Sumter	435	1,193
Suwannee	7,809	17,782
Taylor	2,549	7,602
Volusia .....	.....	.....
Wakulla	291	601
Walton	4,405	9,436
Washington	984	2,604
Totals	83,574	\$ 248,937

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	SHEEP AND LAMBS Movement During Period—All Ages. Purchased.	
	Number	Value
Alachua		\$
Baker		
Bay	25	75
Bradford		
Brevard		
Broward		
Calhoun		
Citrus	14	120
Clay		
Columbia		
Dade		
DeSoto	20	40
Duval	6	25
Escambia	101	251
Franklin	2	12
Gadsden		
Hamilton	70	70
Hernando		
Hillsborough	600	1,800
Holmes	17	44
Jackson	2	5
Jefferson	202	505
Lafayette		
Lake	200	600
Lec		
Leon	60	200
Levy		
Liberty		
Madison		
Manatee		
Marion		
Monroe*		
Nassau	30	45
Okaloosa	3,333	7,000
Orange	20	80
Osceola		
Palm Beach		
Pasco	491	894
Pinellas		
Polk		
Putnam		
Santa Rosa	7	21
Seminole		
St. Johns		
St. Lucie		
Sumter		
Swannee		
Taylor	150	400
Volusia		
Wakulla		
Walton	77	158
Washington	1,510	3,475
Totals	6,937	\$ 15,708

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	SHEEP AND LAMBS Movement During Period—All Ages. Sold Living.	
	Number	Value
Alachua		\$
Baker		
Bay		
Bradford		
Brevard		
Broward		
Calhoun		
Citrus	30	80
Clay		
Columbia		
Dade		
DeSoto		
Duval	16	48
Escambia	26	125
Franklin		
Gadsden	32	127
Hamilton	4	8
Hernando		
Hillsborough		
Holmes	548	1,634
Jackson		
Jefferson		
Lafayette		
Lake		
Lee		
Leon	109	566
Levy	35	70
Liberty	11	38
Madison		
Manatee		
Marion	45	140
Monroe*		
Nassau		
Okaloosa	700	1,800
Orange		
Osceola	400	1,200
Palm Beach		
Pasco	77	153
Pinellas		
Polk		
Putnam		
Santa Rosa	504	1,520
Seminole		
St. Johns	21	42
St. Lucie		
Sumter	206	500
Suwannee	100	382
Taylor	1,698	4,946
Volusia		
Wakulla	185	480
Walton	20	120
Washington	42	103
Totals	4,802	\$ 14,064

*Not reported.

TABLE NO. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	SHEEP AND LAMBS Movement During Period—All Ages. Slaughtered.	
	Number	Value
Alachua		\$.....
Baker		
Bay	15	45
Bradford		
Brevard		
Broward		
Calhoun	4	10
Citrus	15	60
Clay		
Columbia		
Dade		
DeSoto	4	15
Duval	210	715
Escambia	18	51
Franklin	4	24
Gadsden	16	34
Hamilton		
Hernando		
Hillsborough	600	3,000
Holmes	38	103
Jackson		
Jefferson		
Lafayette		
Lake		
Lee		
Leon	120	700
Levy		
Liberty	2	0
Madison		
Manatee	10	60
Marion	180	460
Murphy*		
Nassau		
Okaloosa		
Orange		
Osceola		
Palm Beach	127	820
Pasco	20	42
Pinellas		
Polk		
Putnam		
Santa Rosa	60	180
Seminole		
St. Johns	81	102
St. Lucie		
Sumter		
Suwannee	2	5
Taylor		
Volusia		
Wakulla		
Walton	4	8
Washington	18	37
Totals.....	1,548	\$ 6,537

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	SHEEP AND LAMBS Movement During Period—All Ages, Died of Disease.	
	Number	Value
Alachua	30	\$ 75
Baker .....	.....	.....
Bay	4	10
Bradford	20	100
Brevard .....	.....	.....
Broward .....	.....	.....
Calhoun	100	230
Citrus	32	110
Clay .....	.....	.....
Columbia .....	.....	.....
Dade .....	.....	.....
DeSoto	10	50
Duval .....	.....	.....
Escambia	17	38
Franklin .....	.....	.....
Gadsden	27	180
Hamilton .....	.....	.....
Hernando .....	.....	.....
Hillsborough	8	6
Holmes	123	266
Jackson .....	.....	.....
Jefferson .....	.....	.....
Lafayette .....	.....	.....
Lake .....	.....	.....
Lee .....	.....	.....
Leon	8	20
Levy .....	.....	.....
Liberty .....	.....	.....
Madison .....	.....	.....
Manatee .....	.....	.....
Marion .....	.....	.....
Monroe* .....	.....	.....
Nassau	12	30
Okaloosa	247	732
Orange .....	.....	.....
Osceola	30	90
Palm Beach	65	120
Pasco	111	222
Pinellas .....	.....	.....
Polk	35	35
Putnam .....	.....	.....
Santa Rosa	402	1,130
Seminole .....	.....	.....
St. Johns	3	6
St. Lucie .....	.....	.....
Sumter .....	.....	.....
Suwannee	52	50
Taylor	30	30
Volusia .....	.....	.....
Wakulla .....	.....	.....
Walton	5	10
Washington	62	138
Totals	1,428	\$ 3,678

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	SHEEP AND LAMBS Movement During Period--All Ages, Killed by Dogs.	
	Number	Value
Alachua		\$
Baker	150	255
Bay	5	12
Bradford	5	25
Brevard		
Broward		
Calhoun	150	450
Citrus		
Clay		
Columbia		
Dade		
DeSoto		
Duval	14	01
Escambia	385	925
Franklin	2	12
Gadsden	8	16
Hamilton		
Hernando		
Hillsborough		
Holmes	742	1,909
Jackson	27	30
Jefferson		
Lafayette		
Lake		
Lee		
Leon	105	350
Levy	25	50
Liberty	14	37
Madison		
Manatee	2	6
Marion	105	265
Monroe		
Nassau	50	150
Okaloosa	685	1,611
Orange		
Osceola	12	36
Palm Beach		
Pasco	16	12
Pinellas		
Polk	40	40
Putnam		
Santa Rosa	935	2,652
Seminole		
St. Johns		
St. Lucie		
Sumter		
Suwannee		
Taylor	100	200
Volusia		
Wakulla		
Walton	24	72
Washington	50	105
Totals	3,651	\$ 9,420

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	SHEEP AND LAMBS Movement During Period—All Ages. Died of Exposure to Weather.	
	Number	Value
Alachua	42	\$ 125
Baker		
Bay		
Bradford		
Brevard		
Broward		
Calhoun	6	18
Citrus		
Clay		
Columbia		
Dade		
DeSoto		
Duval	18	62
Escambia	276	661
Franklin		
Gadsden	10	50
Hamilton		
Hernando		
Hillsborough		
Holmes	65	40
Jackson	8	23
Jefferson		
Lafayette		
Lake		
Lee		
Leon		
Levy		
Liberty		
Madison		
Manatee		
Marion	80	120
Monroe*		
Nassau		
Okaloosa	2,240	4,746
Orange	200	600
Osceola		
Palm Beach		
Pasco		
Pinellas		
Polk		
Putnam		
Santa Rosa	64	163
Seminole		
St. Johns	18	62
St. Lucie		
Sumter		
Suwannee		
Taylor		
Volusia		
Wakulla		
Walton	275	525
Washington		
Totals	3,307	\$ 7,198

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	SHEEP	
	(All Ages on Hand July 1, 1916)	
	Number	Value
Alachua	1,239	\$ 2,941
Baker	211	522
Bay .....	.....	.....
Bradford	197	783
Brevard	31	259
Broward	3	30
Calhoun	4,334	11,658
Citrus	40	200
Clay	263	539
Columbia .....	.....	.....
Dade .....	.....	.....
DeSoto	384	1,145
Duval	2,825	8,521
Escambia	6,459	16,253
Franklin	60	360
Gadsden	285	710
Hamilton	187	300
Hernando	760	1,510
Hillsborough	900	2,350
Holmes	7,679	17,359
Jackson	291	508
Jefferson	31	86
Lafayette	1	1
Lake	200	600
Lee .....	.....	.....
Leon	884	2,889
Levy	603	1,210
Liberty	1,135	3,421
Madison .....	.....	.....
Manatee	380	780
Marion	3,125	6,065
Monroe* .....	.....	.....
Nassau	1,637	4,602
Okaloosa	12,931	29,708
Orange	70	210
Osceola	3,779	11,224
Palm Beach .....	.....	.....
Pasco	208	328
Pinellas .....	.....	.....
Polk	8,652	8,852
Putnam	8	30
Santa Rosa	10,561	28,837
Seminole .....	.....	.....
St. Johns	3,005	15,790
St. Lucie .....	.....	.....
Sumter	50	166
Suwannee	50	166
Taylor	145	390
Volusia	11,585	39,960
Wakulla	536	925
Walton	10,842	29,388
Washington	7,372	15,921
Totals.....	104,721	\$ 270,320

*Not reported.

TABLE No. 4—LIVE STOCK ON HAND, 1915-16—Continued.

COUNTIES	GOATS	
	(All Ages on Hand July 1, 1916)	
	Number	Value
Alachua	1,788	\$ 1,746
Baker	496	496
Bay	181	93
Bradford	4,241	4,938
Brevard		
Broward	1	5
Calhoun	1,742	1,742
Citrus	1,361	1,398
Clay	337	374
Columbia	1,241	1,241
Dade	32	188
DeSoto	176	511
Duval	1,986	4,220
Escambia	3,700	2,563
Franklin	484	1,452
Gadsden	839	839
Hamilton	534	316
Hernando	745	840
Hillsborough	648	1,543
Holmes	1,486	762
Jackson	2,990	1,604
Jefferson	954	954
Lafayette	923	633
Lake	18	17
Lee	40	80
Leon	1,428	1,536
Levy	782	782
Liberty	28	26
Madison		
Manatee	185	183
Marion	2,356	1,971
Monroe*		
Nassau	1,301	1,423
Okaloosa	1,092	636
Orange		
Osceola	348	827
Palm Beach	1	3
Pasco	450	1,345
Pinellas	119	122
Polk	288	285
Pulnam	778	1,662
Santa Rosa	2,723	1,954
Seminole	15	75
St. Johns	496	1,073
St. Lucie	40	100
Sumter		267
Suwannee	1,410	897
Taylor	745	745
Volusia	394	1,880
Wakulla	565	572
Walton	805	528
Washington	1,727	1,471
Totals	45,517	\$ 48,248

*Not reported.

TABLE No. 5—POULTRY AND PRODUCTS, 1915-16.

COUNTIES	POULTRY—ALL AGES			
	Common Barnyard		All Others	
	Number	Value	Number	Value
Alachua	87,827	\$ 36,464	2,091	\$ 1,975
Baker	22,162	9,820	5,052	1,458
Bay	14,557	3,897	754	445
Bradford	85,244	33,578	20	40
Brevard	20,590	18,475	3,355	1,098
Broward	12,885	8,521	.....	.....
Calhoun	30,892	15,818	419	420
Citrus	31,463	20,240	607	1,000
Clay	17,527	8,510	.....	.....
Columbia	57,995	23,586	237	318
Dade	59,419	49,238	.....	.....
DeSoto	52,297	24,284	.....	.....
Duval	173,901	129,968	15,847	18,420
Escambia	105,894	49,712	7,839	7,050
Franklin	44,390	26,634	2,616	1,982
Gadsden	75,573	27,281	1,612	1,586
Hamilton	92,020	18,329	69	33
Hernando	19,018	10,851	2,497	2,733
Hillsborough	243,672	105,716	6,098	3,967
Holmes	56,151	14,038	329	203
Jackson	204,533	53,548	.....	.....
Jefferson	58,172	17,451	.....	.....
Lafayette	39,678	18,510	834	415
Lake	57,083	31,651	20,537	17,275
Lee	34,234	20,172	1,626	1,937
Leon	67,634	29,228	2,324	1,928
Levy	43,084	18,137	1,357	477
Liberty	35,049	6,680	217	40
Madison	36,820	8,231	.....	.....
Manatee	10,943	5,881	115	60
Marion	110,107	54,179	152	110
Monroe*	.....	.....	.....	.....
Nassau	22,266	11,206	12,270	10,258
Okaloosa	41,062	13,379	.....	.....
Orange	79,619	44,555	1,140	1,120
Osceola	32,163	13,035	.....	.....
Palm Beach	52,805	49,125	1,330	1,527
Pasco	47,011	22,675	0,106	6,291
Pinellas	41,679	30,765	441	850
Polk	426	350	77,243	38,591
Putnam	94,191	50,802	2,003	2,847
Santa Rosa	68,315	25,078	356	237
Seminole	47,796	34,403	.....	.....
St. Johns	112,297	56,149	905	533
St. Lucie	23,672	22,337	.....	.....
Sumter	22,276	11,139	.....	.....
Swannee	79,527	27,792	268	152
Taylor	24,727	7,040	175	156
Volusia	121,010	60,525	4,295	4,791
Wakulla	26,859	8,127	.....	.....
Walton	60,975	23,314	438	247
Washington	38,481	11,890	225	57
Totals	2,995,468	\$1,481,810	187,751	\$ 127,810

*Not reported.

TABLE No. 5—POULTRY AND PRODUCTS, 1915-16—Continued.

COUNTIES	EGGS—SOLD AND USED	
	Dozen	Value
Alachua	281,616	\$ 60,345
Baker	88,637	17,954
Bay	15,837	4,290
Bradford	221,024	45,318
Brevard	10,332	3,221
Broward	57,045	15,584
Calhoun	51,810	9,910
Citrus	128,880	36,906
Clay	68,079	17,515
Columbia	119,100	25,716
Dade	138,492	62,744
DeSoto	106,034	26,268
Duval	921,612	371,855
Escambia	266,383	63,260
Franklin	103,605	34,532
Gadsden	204,983	42,045
Hamilton	52,972	11,111
Hernando	58,190	16,540
Hillsborough	1,480,929	448,127
Holmes	164,408	32,832
Jackson	435,471	162,364
Jefferson	205,250	41,050
Lanette	50,846	8,813
Lake	408,047	128,361
Lee	94,682	23,070
Leon	149,019	29,981
Levy	129,934	23,556
Liberty	21,136	3,270
Madison	28,036	6,020
Manatee	19,525	4,804
Marion	525,848	128,600
Monroe*		
Nassau	130,024	27,012
Okaloosa	200,227	30,478
Orange	232,001	66,812
Osceola	73,170	18,624
Palm Beach	399,013	80,445
Pasco	177,618	38,850
Pinellas	279,488	69,836
Polk	133,288	27,307
Putnam	600,058	178,110
Santa Rosa	135,995	30,824
Seminole	62,968	27,106
St. Johns	313,058	203,763
St. Lucie	129,449	39,918
Sumter	55,435	11,242
Swannee	68,284	11,856
Taylor	30,830	7,937
Volusia	605,450	121,050
Wakulla	116,231	20,137
Walton	110,679	22,785
Washington	62,742	10,704
Totals	11,014,279	\$ 2,950,256

*Not reported.

TABLE No. 6—DAIRY PRODUCTS, 1915-16.

COUNTIES	MILK—SOLD AND USED	
	Gallons	Value
Alachua	457,166	135,806
Baker	11,334	4,470
Bay	23,945	4,698
Bradford	93,526	35,555
Brevard	10,400	4,145
Broward	25,252	10,870
Calhoun	47,027	20,003
Chlorus	175,483	35,016
Clay	31,690	12,120
Columbia	203,500	67,164
Dade	205,819	112,475
DeSoto	50,630	14,542
Duval	1,689,255	475,080
Escambia	500,217	157,821
Franklin	614	246
Gadsden	317,295	72,070
Hamilton	123,223	25,268
Hernando	59,520	21,547
Hillsborough	1,444,720	441,792
Holmes	300,632	60,127
Jackson	328,632	66,042
Jefferson	58,350	8,525
Lafayette	23,973	8,482
Lake	268,110	65,385
Lee	106,410	48,663
Leon	192,457	52,116
Levy	20,960	8,351
Liberty	73	30
Madison	19,038	5,711
Manatee	69,400	24,584
Marion	316,138	79,138
Monroe*		
Nassau	152,991	44,485
Okaloosa	338,375	97,427
Orange	622,000	201,197
Osceola	74,646	29,247
Palm Beach	155,858	56,703
Pasco	209,535	80,145
Pinellas	231,255	93,945
Polk	140,768	39,855
Putnam	327,210	180,874
Santa Rosa	262,500	54,023
Seminole	37,070	13,100
St. Johns	2,143	857
St. Lucie	105,909	38,583
Sumter	17,015	4,564
Suwannee	146,168	43,485
Taylor	16,655	2,085
Volusia	804,000	282,600
Wakulla	11,375	4,272
Wallace	204,763	55,811
Washington	65,202	12,252
Totals	11,091,632	\$ 3,394,854

*Not reported.

TABLE No. 6—DAIRY PRODUCTS, 1915-16—Continued.

COUNTIES	BUTTER—SOLD AND USED.	
	Pounds	Value
Alachua	99,337	\$ 32,927
Baker	100	35
Bay	8,093	3,074
Bradford	20,276	9,789
Brevard .....	.....	.....
Broward	182	73
Calhoun	10,053	3,474
Citrus	53,830	28,570
Clay	2,706	914
Columbia	61,969	18,918
Dade	1,340	535
DeSoto	5,910	2,365
Duval	5,175	1,660
Escambia	35,372	10,188
Franklin	397	123
Gadsden	84,232	27,849
Hamilton	24,545	7,330
Hernando	9,550	3,597
Hillsborough	69,002	27,634
Holmes	154,794	30,959
Jackson	100,553	26,970
Jefferson	10,840	3,357
Lafayette	7,712	2,977
Lake	33,430	11,583
Lee	2,750	1,110
Leon	96,200	25,858
Levy	30,270	1,839
Liberty	490	179
Madison	4,894	3,482
Manatee	995	483
Marion	91,030	28,390
Monroe* .....	.....	.....
Nassau	84,227	9,857
Okaloosa	127,168	31,844
Orange	76,170	30,227
Osceola	8,570	2,910
Palm Beach	2,320	1,037
Pasco	44,480	14,480
Pinellas	14,905	5,970
Polk	14,065	5,834
Putnam	70,085	28,015
Santa Rosa	81,188	19,712
Seminole .....	.....	.....
St. Johns	54	17
St. Lucie	9,780	3,002
Sumter	7,225	2,182
Suwannee	2,060	641
Taylor	3,505	1,048
Volusia .....	.....	.....
Wakulla	3,607	963
Walton	30,332	9,689
Washington	9,143	2,494
Totals	1,566,587	\$ 486,134

*Not reported.

TABLE No. 6—DAIRY PRODUCTS, 1915-16—Continued.

COUNTIES	CHEESE—SOLD AND USED	
	Pounds	Value
Alachua		\$
Baker		
Bay		
Bradford		
Brevard		
Broward		
Calhoun		
Citrus		
Clay		
Columbia		
Dade		
DeSoto		
Duval		
Escambia		
Franklin		
Gadsden		
Hamilton		
Hernando		
Hillsborough	466	114
Holmes		
Jackson		
Jefferson		
Lafayette	54	19
Lake		
Lee		
Leon	25	8
Levy		
Liberty		
Madison		
Manatee		
Marion		
Monroe*		
Nassau		
Okaloosa		
Orange		
Osceola		
Palm Beach		
Pasco		
Pinellas		
Polk	759	300
Putnam		
Santa Rosa		
Seminole		
St. Johns		
St. Lucie		
Sumter		
Suwannee	52	13
Taylor		
Volusia		
Wakulla		
Walton	100	10
Washington		
Totals	1,447	\$ 464

*Not reported.

TABLE No. 6—DAIRY PRODUCTS, 1915-16—Continued.

COUNTIES	BUTTER—SOLD AND USED.	
	Pounds	Value
Alachua	99,337	\$ 32,927
Baker	100	35
Bay	8,095	3,074
Bradford	20,276	9,789
Brevard	182	73
Broward	10,053	3,474
Calhoun	53,830	28,570
Citrus	2,706	914
Clay	61,969	18,818
Columbia	1,340	535
Dade	5,910	2,365
DeSoto	5,175	1,660
Duval	33,372	10,186
Escambia	307	123
Franklin	84,232	27,849
Gadsden	24,545	7,330
Hamilton	9,550	3,597
Hernando	69,092	27,634
Hillsborough	154,794	30,959
Holmes	100,589	26,970
Jackson	10,840	3,357
Jefferson	7,712	2,977
Lafayette	33,430	11,583
Lake	2,750	1,110
Lee	96,200	25,858
Leon	30,270	1,839
Levy	490	179
Liberty	4,894	3,482
Madison	995	483
Manatee	91,030	28,390
Marion	34,227	9,857
Monroe*	127,168	31,944
Nassau	78,170	30,227
Okaloosa	8,570	2,910
Orange	2,320	1,037
Osceola	44,480	14,460
Palm Beach	14,905	5,970
Pasco	14,065	5,834
Pinellas	70,083	28,015
Polk	81,186	19,712
Putnam	54	17
Santa Rosa	9,760	3,002
Seminole	7,225	2,182
St. Johns	2,060	641
St. Lucie	3,505	1,043
Sumter	3,697	968
Suwannee	30,392	9,680
Taylor	8,143	2,404
Volusia		
Wakulla		
Walton		
Washington		
Totals.....	1,566,587	\$ 496,134

*Not reported.

TABLE No. 6—DAIRY PRODUCTS, 1915-16—Continued.

COUNTIES	CHEESE—SOLD AND USED	
	Pounds	Value
Alachua		\$
Baker		
Bay		
Bradford		
Brevard		
Broward		
Cathoun		
Citrus		
Clay		
Columbia		
Dade		
DeSoto		
Duval		
Escambia		
Franklin		
Gadsden		
Hamilton		
Hernando		
Hillsborough	466	114
Holmes		
Jackson		
Jefferson		
Lafayette	54	10
Lake		
Lee		
Leon	25	8
Levy		
Liberty		
Madison		
Manatee		
Marion		
Monroe*		
Nassau		
Okaloosa		
Orange		
Osceola		
Palm Beach		
Pasco		
Pinellas		
Polk	750	300
Putnam		
Santa Rosa		
Seminole		
St. Johns		
St. Lucie		
Sumter		
Suwannee	52	13
Taylor		
Volusia		
Wakulla		
Walton	100	10
Washington		
Totals.....	1,447	\$ 464

*Not reported.

TABLE No. 7—MISCELLANEOUS PRODUCTS, 1915-16.

COUNTIES	WOOL (Spring Clip)		
	Fleeces	Pounds	Value
Alachua			\$.
Baker	200	500	150
Bay	1,640	5,575	1,450
Brevard			
Broward			
Calhoun	1,772	9,129	2,878
Citrus			
Clay	75	125	250
Columbia			
Dade	808	22,744	3,003
DeSoto	23	110	33
Duval	400	1,938	402
Escambia	4,112	13,040	4,151
Franklin			
Gadsden	110	320	86
Hamilton	50	100	25
Hernando	610	1,884	606
Hillsborough			
Holmes	3,638	10,914	3,798
Jackson			
Jefferson			
Lafayette			
Lake			
Lee			
Leon	424	1,422	399
Levy	426	650	178
Liberty	270	800	311
Madison			
Manatee	400	3,100	300
Marion	1,540	4,525	1,382
Monroe*			
Nassau	1,007	3,998	971
Okaloosa	10,172	32,415	10,332
Orange			
Osceola	1,500	4,500	1,200
Palm Beach			
Pasco	61	225	69
Pinellas			
Polk	2,850	8,500	2,165
Putnam	10	30	9
Santa Rosa	10,411	20,582	7,520
Seminole			
St. Johns	2,305	9,050	2,034
St. Lucie			
Sumter			
Suwannee			
Taylor			
Volusia	7,595	21,150	5,555
Wakulla			
Walton	9,358	39,696	12,030
Washington	4,310	13,350	4,767
Totals	60,735	234,645	\$ 66,845

*Not reported.

TABLE No. 7—MISCELLANEOUS PRODUCTS, 1915-16—Continued.

COUNTIES	HONEY		
	Stands of Bees	Pounds	Value
Alachua	214	2,860	430
Baker	39	275	57
Bay	60	170	46
Bradford	257	4,378	542
Brevard	98	2,250	670
Broward	360	4,912	510
Calhoun	2,516	112,298	7,068
Citrus	37	450	1,919
Clay	209	3,009	434
Columbia	176	6,120	542
Dade			
DeSoto	400	4,200	420
Duval	181	3,655	807
Escambia	1,087	17,145	1,553
Franklin	1,278	12,240	837
Gadsden	743	6,321	306
Hamilton	25	709	79
Hernando	166	265	52
Hillsborough	312	5,864	1,007
Holmes	450	5,095	510
Jackson			
Jefferson	154	3,520	412
Lafayette	220	2,311	297
Lake	589	17,661	2,532
Lee	111	815	290
Leon	735	22,865	2,101
Levy	151	1,200	129
Liberty	843	20,745	1,728
Madison			
Manatee	120	13,475	755
Marion	84	1,440	247
Monroe*			
Nassau	171	5,873	603
Okaloosa	770	10,131	973
Orange	171	8,800	526
Osceola	265	2,510	409
Palm Beach	2,289	18,257	40,960
Pasco	176	3,589	594
Pinellas	548	13,570	2,317
Polk	31	365	37
Putnam	843	48,450	4,845
Santa Rosa	420	9,520	824
Seminole	86	2,350	585
St. Johns	1,601	5,650	6,887
St. Lucie	310	2,016	940
Sumter	88	1,605	230
Suwannee	136	1,386	133
Taylor	44	355	58
Volusia	3,942	151,549	11,869
Wakulla	978	30,085	1,929
Walton	1,013	18,127	1,854
Washington	392	3,920	489
Totals.....	25,797	623,532	\$ 103,626

*Not reported.

TABLE No. 7—MISCELLANEOUS PRODUCTS, 1915-16—Continued.

COUNTIES	BEESWAX	
	Pounds	Value
Alachua	770	\$ 159
Baker .....	.....	.....
Bay	100	20
Bradford .....	.....	.....
Brevard	40	10
Broward	60	15
Calhoun	2,218	353
Citrus	30	5
Clay .....	.....	.....
Columbia	10	3
Dade .....	.....	.....
DeSoto	800	175
Duval	129	40
Escambia	364	89
Franklin	369	95
Gadsden	134	35
Hamilton	205	68
Hernando	6	2
Hillsborough .....	.....	.....
Holmes	410	110
Jackson .....	.....	.....
Jefferson	222	65
Lafayette	42	13
Lake	623	149
Lee	275	88
Leon	513	117
Levy .....	.....	.....
Liberty	250	67
Madison .....	.....	.....
Manatee	405	754
Marlton	60	14
Monroe* .....	.....	.....
Nassau	423	85
Okaloosa	523	128
Orange	2,950	445
Osceola	51	14
Palm Beach .....	.....	.....
Pasco	45	36
Pinellas .....	.....	.....
Polk .....	.....	.....
Putnam	1,021	246
Santa Rosa	105	52
Seminole .....	.....	.....
St. Johns .....	.....	.....
St. Lucie .....	.....	.....
Sumter .....	.....	.....
Suwannee	30	7
Taylor .....	.....	.....
Volusia .....	.....	.....
Wakulla	160	32
Walton	450	91
Washington	757	174
Totals.....	14,035	\$ 3,724

*Not reported.

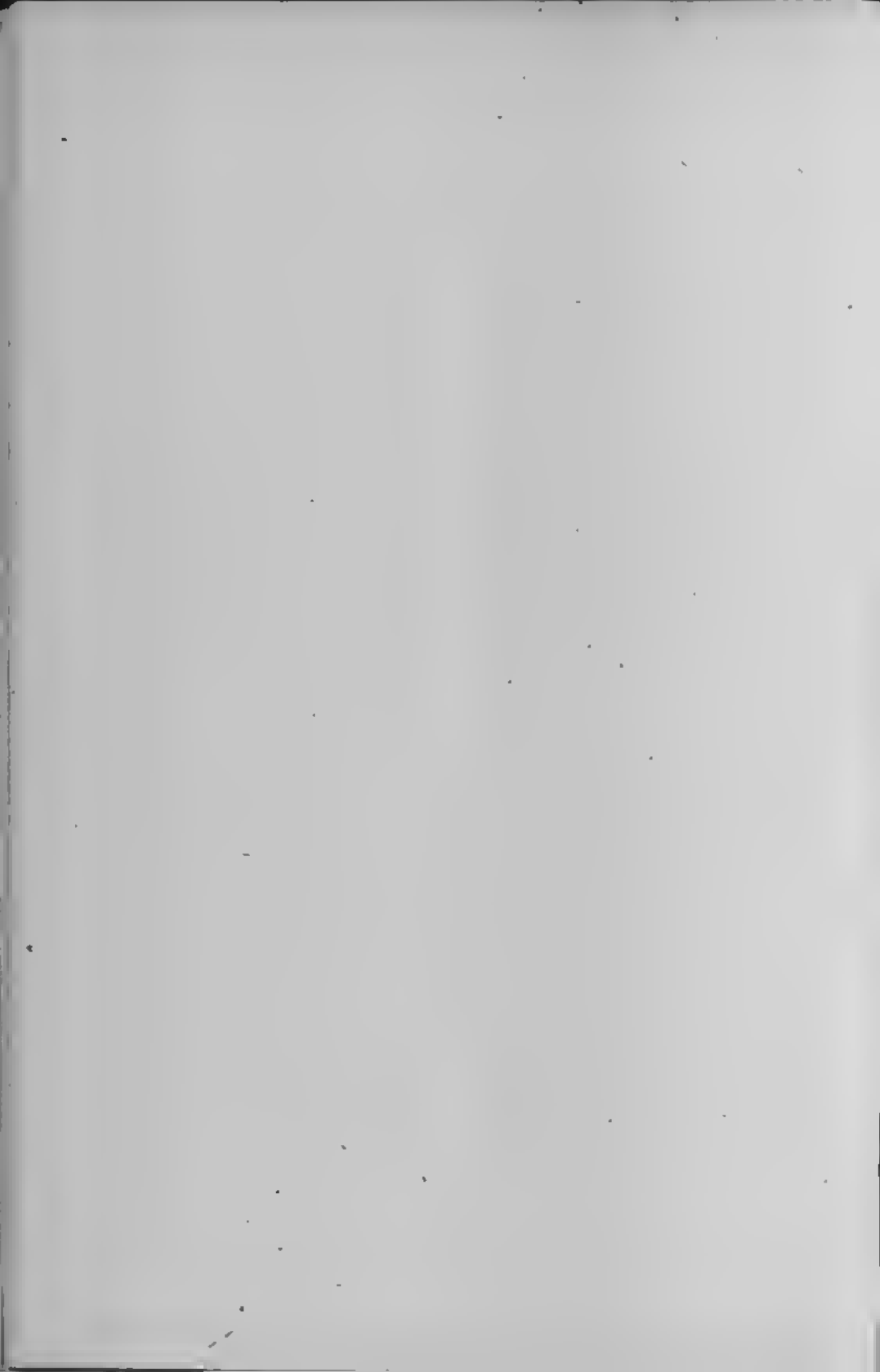
YEAR 1915-16.

Table No. 8 Total Acreage of Crops.

Field Crop, acres.....	1,478,428
Vegetable and Garden Products, acres.....	88,955
Total Acreage in Cultivation.....	1,567,383

Table No. 9—Total Value of All Farm Products.

Table No. 1—Field Crops	\$21,613,300
Table No. 2—Vegetable and Garden Products.	10,724,519
Table No. 3—Fruit Products	13,511,950
Table No. 4—Live Stock on Hand.....	29,869,842
Table No. 5—Poultry and Products.....	4,559,876
Table No. 6—Dairy Products	3,881,452
Table No. 7—Miscellaneous Products	174,225
Total Values	\$84,335,164



U. S. Department of Agriculture,
CLIMATOLOGICAL SERVICE
of the
WEATHER BUREAU

Central Office: Washington, D. C.

FLORIDA SECTION,
Prof. A. J. Mitchell, Meteorologist,
Year, 1916.

**ANNUAL SUMMARY, CLIMATOLOGICAL SERVICE,
FLORIDA SECTION.**

GENERAL SUMMARY.

The year averaged above the normal with regard to temperature, but there was a marked deficiency in precipitation, which occurred during most of the seeding and growing months; in fact, all months averaged drier than usual, except July, and from October to December, inclusive. Compared with previous years since 1892, only one was drier—that of 1895. Spring was unusually late, as frost occurred in the Miami section during March; and over much of the section as late as April 10, which broke the record for the date of the last killing frost of Spring. The first frost of Autumn occurred over the extreme northwest during the last decade of October. During November it was quite general from the 16th to 20th, locally damaging in the southern division on the latter date. The highest temperature was 102°, and the lowest, 21°. As a whole, the year was warmer than that of 1915. The Summer and Autumn were featured by several trop-

ical storms. Those of especial concern to this section occurred on July 5th and October 18th. Both moved northwest over the Gulf and approached the coast near the extreme northwest portion of the State. The storm of July destroyed the bulk of the cotton crop west of the Apalachicola River, and seriously damaged cane, corn and minor crops. The lowest barometer reading at Pensacola was 29.31 inches, and the local damage approximated \$1,000,000. The October storm was attended by lower barometric pressure than that of July, the lowest record being 28.76 inches, but the damage to property was comparatively light. The bulk of the cotton crop was gathered during October, the weather during much of the picking season being favorable. The yield was much below the average of previous years. Citrus shipments were active during November and December; the yield was probably somewhat in excess of early estimates. Truck suffered considerable damage from the frosts of November and December.

THE WEATHER BY MONTHS.

JANUARY.—The month was spring-like most of the time, the only cold spell of moment having occurred on the 18th and 19th, when the temperature was about freezing over the northern division. The mean temperature, 65.4°, approximated the highest of record for January; the rainfall was deficient about 2 inches. The phenological conditions reflected those of March rather than January. Citrus bloom was rather abundant, and vegetation generally was well advanced, except where retarded by the dry weather. The month was dry and sunshiny.

FEBRUARY.—The outstanding features of February were the droughty conditions and the high percentage of sunshine. General farm work was well advanced, although the absence of rain delayed germination of seed; there were about 15 days without appreciable precipitation.

Frost damaged melons, truck, and some tender citrus growth during the 1st and 2nd decades; and on the 27th and 28th local frost damaged truck in the southern division. The month was the driest February, except one in 25 years.

MARCH.—In contrast with January and February, March was much colder than the normal. Damaging frosts occurred over all divisions on four or five days, extending, locally, to the southern division on the 9th, 10th, and 17th. As were the two preceding months, March was unusually dry, unfavorably affecting truck, corn, early cotton, and citrus bloom. The bulk of the month's rail fell on the 1st, 3d, and 8th.

APRIL.—April was the fifth consecutive month with deficient rainfall, unfavorably affecting citrus fruits, corn, cane, melons, tobacco, truck and berries. The month was, also, the coldest April in twenty-one years at Miami. The date of the last killing frost for the section was broken; previously it was the 7th, but on the 10th freezing temperatures occurred over all districts, except the southern, but even there killing frost was reported from Broward County, where vegetation suffered severely.

MAY.—Droughty conditions continued up to the 13th, when copious and widespread showers began. Precipitation was especially heavy in the western division on the 22nd and 23rd, due to a "secondary" that developed near the Gulf coast. The rains brought relief to citrus fruits, truck, corn, melons and cotton. The cool weather of the first few days was followed by much warmer, culminating in a maximum of 102° on the 10th. At the close of the month rain was still needed more or less generally west of the Suwanee River.

JUNE.—Showers during the 2nd and 3rd decades were very beneficial to all crops, principally corn, cane, truck and cotton. The boll weevil was active over the western

portion of the belt. The rains brought out much citrus "June bloom," which had been delayed by the previous dry weather. Temperatures were moderate, averaging below the normal; the highest was 101°. Although showers were frequent, with heavy rain over much of the section, the average was less than the normal.

JULY.—A tropical storm that approached the coast on the 5th, gave heavy rains, which continued from the 3rd to the 9th; a second period of heavy rain continued from the 21st to the 28th. West of the Apalachicola River cotton was cut off 75 per cent, and corn, cane, and minor crops on low lands were destroyed. Pineapples and citrus fruits, however, were improved. The following heavy rains for the month occurred: Bonifay, 30.6; De Funiak Springs and Garniers, 21.6; Molino, 21.0, and Pensacola, 17.9 inches. Much cotton and corn acreage was abandoned.

AUGUST.—With regard to average temperature, the month was practically normal. It was much drier, however, than usual, although showers occurred daily in some portions of the section. Rainfall was heaviest during the first decade; the period of lean rainfall was during the second decade. Cotton and corn west of the Apalachicola River did not recover from the disastrous winds and rains of July; but cane, peanuts, sweet potatoes and grasses showed some improvement. Short staple cotton opened quite rapidly in the west, and the first bale was marketed about the 8th.

SEPTEMBER.—September was dry and cool—a continuation of the droughty conditions of the previous eight or ten months; the deficiency in rainfall exceeded 2 inches. A tropical disturbance that moved westward over the peninsula on the 12th gave 24-hour rains as follows: Jacksonville and Lakeland, 2.2 inches, and St. Petersburg, 5.8 inches. The dry weather forced cotton to open rapidly.

and the bulk of the crop was harvested. Citrus fruits, peanuts, sweet potatoes, and cane were promising east of the Suwanee River.

OCTOBER.—October gave about the normal rainfall and temperature. The chief period of low temperature was from the 21st to the 24th; the lowest for the month was 34°. The bulk of the month's rain fell from the 5th to the 7th, and 24th to 30th, except that droughty conditions prevailed in the western division most of the time. A severe tropical storm approached the northwest coast during the 18th, doing much damage at Pensacola and vicinity. The lowest barometer was 28.76 inches at Pensacola on the 18th. Cane, peanuts, hay, sweet potatoes and corn were generally good. Citrus fruits were smaller than usual, owing to previous dry weather.

NOVEMBER.—A month of killing frost and freezing temperature over much of the northwestern counties, with damaging frost southward to interior portions of Palm Beach and Broward counties on the 20th. Seed cane and fall truck were killed over much of the western and northern divisions, and vegetables suffered in the central division. The month was exceptionally cloudy and wet—the latter due, chiefly, to heavy rains on the 14th, 15th, 16th and 23rd. There were several days, however, without rainfall.

DECEMBER.—The wet weather of November continued into the current month, although most of the first decade was dry, except in the west, where heavy rains occurred as early as the 7th. The bulk of the month's rain fell during the second decade. Although the month averaged warmer than the normal, it was not without freezing temperatures and damaging frost, the latter southward to the vicinity of Miami. Frost formed in all divisions on the 13th, 14th, 16th, 17th and 19th, except the southern, where it occurred on the 17th. About 50 per cent of the citrus crop was shipped.

COMPARATIVE ANNUAL DATA FOR FLORIDA.

Year.	Temperature.				Precipitation.	
	Mean.	Departure from the Normal.	Highest.	Lowest.	Average.	Departure from the Normal.
1892	70.4	-0.2	101	22	47.99	- 4.42
1893	71.0	+0.4	104	19	53.01	+ 0.60
1894	71.2	+0.6	101	12	52.51	+ 0.10
1895	69.9	-0.7	100	11	45.60	- 6.91
1896	71.0	+0.4	103	20	49.62	- 2.79
1897	71.2	+0.6	104	17	56.69	+ 4.28
1898	70.5	-0.1	102	17	48.36	- 4.05
1899	71.0	+0.4	104	2	53.93	+ 1.52
1900	70.7	+0.1	104	13	61.19	+ 8.78
1901	68.8	-1.8	107	12	58.47	+ 6.06
1902	70.8	+0.2	105	15	51.24	- 1.17
1903	69.8	-0.8	105	17	55.79	+ 3.38
1904	69.9	-0.7	102	20	48.15	- 4.26
1905	70.5	-0.1	103	10	61.43	+ 9.02
1906	70.9	+0.3	101	14	53.76	+ 1.35
1907	71.5	+0.9	102	24	49.15	- 3.26
1908	71.2	+0.6	103	20	48.54	- 3.87
1909	71.1	+0.5	103	16	49.52	- 2.89
1910	69.2	-1.4	102	19	50.88	- 1.53
1911	72.3	+1.7	104	15	47.40	- 5.01
1912	71.1	+0.6	104	21	64.88	+11.61
1913	71.2	+0.7	104	23	48.02	- 6.20
1914	70.3	-0.1	107	19	49.08	- 4.62
1915	70.4	-0.1	105	23	56.30	+ 1.53
1916	71.1	+0.3	102	21	47.10	- 6.26

MONTHLY SUMMARY, 1918.

Month.	Temperature.				Precipitation.		Average Number of Days.				Wind Direction.
	State Average.	Departure From Normal.	Highest.	Lowest.	State Average.	Departure From Normal.	Rainy, 0.01 Inch or More.	Clear.	Partly Cloudy.	Cloudy.	
January	65.3	+6.9	87	24	1.15	-1.96	5	16	10	5	se.
February	60.2	+0.3	88	21	1.14	-2.46	4	18	7	4	ne.
March	62.2	-3.2	92	24	0.88	-2.27	2	22	7	2	sw.
April	68.1	-1.5	94	29	2.29	-0.12	4	19	8	3	sw.
May	76.5	+0.7	102	41	3.89	-0.11	8	13	12	6	e.
June	79.2	-0.8	101	55	6.26	-0.32	14	10	13	7	sw.
July	81.1	-0.4	100	61	8.02	+0.38	15	9	14	8	se.
August	81.5	+0.1	102	61	6.07	-1.48	12	12	13	6	se.
September	78.5	-1.0	97	46	4.95	-2.03	11	12	12	6	ne.
October	73.5	+0.5	95	34	4.13	+0.04	10	13	10	8	ne.
November	65.4	+0.1	89	22	3.73	+1.59	7	16	9	5	ne.
December	61.3	+1.7	87	23	4.59	+1.98	7	17	7	7	se.
Year.....	71.1	+0.3	102	21	47.10	-6.26	100	177	122	67	se.

KILLING FROSTS, 1916.

STATIONS	Last in Spring.	First in Autumn.
Northern Division.		
Archer	Mar. 17	Nov. 16
Bristol	April 10	Nov. 16
Carrabelle	April 10	Nov. 16
Cedar Keys	Mar. 16	Nov. 16
Crescent City	Mar. 17	Dec. 13
Federal Point	Mar. 17	Dec. 16
Fenholloway	April 10	Nov. 16
Fernandina	Feb. 16	Dec. 16
Gainesville	Mar. 17	Nov. 16
Hilliard	Mar. 16	Nov. 16
Jacksonville	April 10	Nov. 17
Jasper	*	*
Johnstown	April 10	Nov. 16
Lake City	April 10	Nov. 16
Live Oak	Mar. 17	*
Macclenny	April 10	Nov. 16
Madison	Mar. 17	Nov. 16
Middleburg	April 10	Nov. 16
Monticello	April 10	*
Morton's Farm	April 10	Nov. 16
Mount Pleasant	April 10	Nov. 16
Newport	*	*
Quincy	*	Nov. 16
St. Augustine	Mar. 17	Dec. 19
Satsuma Heights	Mar. 16	Dec. 16
Switzerland	Mar. 10	Dec. 17
Tallahassee	April 10	Nov. 16
Central Division.		
Bartow	Mar. 18	Dec. 13
Bassenger (near)	Mar. 17	Dec. 16
Brooksville (1)	*	Dec. 16
Brooksville (2)	April 10	Nov. 20
Clermont	None.	None.
Coleman	Mar. 17	Dec. 13
DeLand	Mar. 17	Nov. 20
Eustis	Mar. 17	Dec. 17
Fellsmere	None.	None.
Fort Meade	Mar. 18	†Dec. 17
Fort Pierce	None.	None.
Inverness	Mar. 17	Dec. 16
Kissimmee	Mar. 17	Dec. 17
Lakeland	None.	None.
Lucerne Park	None.	None.
Malabar	None.	None.
McDonald	Mar. 17	Nov. 16

KILLING FROSTS, 1916—Continued.

STATIONS	Last in Spring.	First in Autumn.
Merritts Island	Mar. 5	None.
New Smyrna	Mar. 10	Dec. 17
Ocala	Mar. 17	Nov. 16
Orange City	Mar. 18	Nov. 19
Orlando	Mar. 17	Dec. 17
Pinellas Park	Mar. 17	None.
Plant City	Mar. 18	Dec. 17
Rockwell	Mar. 17	*
St. Cloud	Mar. 17	Dec. 17
St. Leo	Mar. 16	Nov. 16
St. Petersburg	None.	None.
Sanford	Mar. 17	Dec. 16
Tampa	None.	None.
Tarpon Springs	Feb. 16	None.
Titusville	Mar. 17	Dec. 16
Southern Division.		
Arcadia	†Mar. 18	Dec. 13
Avon Park	None.	None.
Boca Grande	None.	†None.
Bradentown	Mar. 18	Dec. 17
Davie	April 10	Nov. 29
Eddy	†None.	*
Fort Lauderdale	None.	None.
Fort Myers	None.	None.
Griffin	None.	None.
Homestead	None.	None.
Hypoluxo	None.	None.
Key West	None.	None.
Long Key	*	None.
Miami (1)	None.	None.
Miami (2)	None.	None.
Punta Gorda	None.	None.
Ritta	Mar. 18	Dec. 13
Sand Key	None.	None.
Western Division.		
Apalachicola	Mar. 17	Nov. 16
Bonifay	April 10	Nov. 16
DeFuniak Springs	Mar. 17	Nov. 16
Garnlers (near)	Mar. 17	Oct. 22
Marianna	Mar. 17	Nov. 15
Mollno	Feb. 20	Nov. 14
Panama City	Mar. 17	*
Pensacola	Mar. 16	Nov. 16
St. Andrews	*	Nov. 16
Wausau	*	*

* Record incomplete.

† Data incomplete, but this date probably correct.

CLIMATOLOGICAL DATA FOR THE YEAR 1916.

STATIONS.	COUNTIES	Elevation, feet.	TEMPERATURE IN DEGREES FAHRENHEIT					
			Length of Record. years.	Annual Mean.	Highest.	Date.	Lowest.	Date.
Northern Division.								
Atcher	Alachua	92	31	....	100	Aug. 17	29	Feb. 16
Bristol	Liberty	7	....	....	99	May 11	29	Nov. 17
Carrabelle	Franklin	10	18	68.1	99	Aug. 18	28	Feb. 16†
Cedar Keys	Levy	10	28	71.2	97	Aug. 18†	31	Feb. 15
Crescent City	Putnam	45	18	70.7	98	June 7†	28	Feb. 16
Federal Point	Putnam	10	25	71.1	100	Aug. 17	31	Mar. 10
Fenbolloway	Taylor	15	24	68.6	100	May 10	21	Feb. 16
Fernandina	Nassau	15	24	....	96	June 8†	20	Feb. 15†
Gainesville	Alachua	176	21	70.0	97	Aug. 15†	21	Feb. 16
Hilliard	Nassau	69	8	69.0	98	May 8†	21	Feb. 16
Jacksonville	Duval	222	46	69.2	95	Aug. 17	23	Feb. 15
Jasper	Hamilton	152	16	....	....	....	....	....
Johnstown	Bradford	125	18	....	98	Aug. 17	22	Feb. 15†
Lake City	Columbia	210	33	68.7	100	May 10	6	Dec. 16
Live Oak	Suwannee	109	17	....	102	May 10	20	Feb. 16
Macclenny	Baker	125	21	....	99	May 10	....	....

Madison	Madison	143	17	68.6	101	May 10	27	Jan. 18
Melrose	Alachua	163	..	...	..	...	..	...
Middleburg	Clay	14	16	69.9	102	Aug. 17	22	Feb. 16
Monticello	Jefferson	207	13	...	98	May 10†	25	Feb. 16
Morton's Farm	Duval	15	2	...	...	...	25	Feb. 16
Mount Pleasant	Gadsden	300	11	68.0	101	May 27	23	Nov. 17
Newport	Wakulla	15	15	...	...	...	25	Feb. 15
Quincy	Gadsden .....	...	2	...	...	...	..	...
St. Augustine	St. Johns	10	65	70.0	94	Aug. 14	29	Mar. 17
Satsuma Heights	Putnam	98	9	69.8	97	Aug. 17	28	Feb. 15
Switzerland	St. Johns	14	24	...	99	May 10	27	Feb. 16
Tallahassee	Leon	192	30	68.6	99	May 27	27	Jan. 18†
Central Division.								
Bartow	Polk	115	30	71.3	97	Aug. 17	26	Feb. 17
Bassenger (near) ..	Osceola	40	4	...	98	June 6†	31	Mar. 5†
Brooksville (1)	Hernando	126	25	...	96	Aug. 17	..	...
Brooksville (2)	Hernando .....	...	5	69.9	98	May 10†	24	Feb. 16
Clermont	Lake	105	24	...	98	Aug. 16†	34	Dec. 16†
Coleman	Sumter	65	1	...	...	...	25	Feb. 16
DeaLnd	Volusia	27	20	70.4	101	Aug. 15†	26	Feb. 16†
Eustis	Lake	56	26	71.8	101	Aug. 17	30	Feb. 16
Fellsmere	St. Lucie	25	3	72.5	96	Aug. 17	34	Mar. 5†
Fort Meade	Polk	125	28	...	100	May 10	26	Feb. 17†
Fort Pierce	St. Lucie	10	16	84.0	96	July 19	37	Dec. 16
Inverness	Citrus	43	18	70.9	98	May 10	25	Feb. 16
Isleworth	Orange .....	...	..	...	...	...	..	...
Kissimmee	Osceola	65	25	72.9	99	Aug. 17	31	Dec. 17
Lakeland	Polk	227	2	72.6	95	May 10	35	Feb. 15
Lucerne Park	Polk .....	...	5	83.2	98	June 13†	34	Mar. 17
Lynne (near)	Marion .....	...	..	...	...	...	..	...
Malabar	Brevard	28	25	73.5	101	June 7	35	Mar. 5

CLIMATOLOGICAL DATA FOR THE YEAR 1916—Continued.

STATIONS.	COUNTIES	Elevation, feet.	TEMPERATURE IN DEGREES FAHRENHEIT					
			Length of Record, years.	Annual Mean.	Highest.	Date.	Lowest.	Date.
McDonald	Orange	20	34	69.6	100	Aug. 17	28	Feb. 15†
Merritts Island....	Brevard	20	34	72.4	93	Aug. 15†	38	Feb. 17†
New Smyrna	Volusia	14	32	....	97	July 14	31	Dec. 17
Ocala	Marion	98	25	69.1	95	June 6†	23	Feb. 16
Orange City	Volusia	39	23	70.2	100	July 19†	24	Mar. 17
Orlando	Orange	111	25	72.9	101	Aug. 17	31	Dec. 17
Pinellas Park	Pinellas	20	5	71.6	95	Aug. 17†	33	Feb. 16
Plant City	Hillsborough ...	121	24	....	101	Aug. 17†	30	Mar. 17
Rockwell	Marion	54	15	....	93	May 10	25	Feb. 16
St. Cloud	Osceola .....	....	3	71.9	96	Aug. 15†	32	Mar. 5†
St. Leo	Pasco	190	22	71.1	96	Aug. 17	33	Feb. 15†
St. Petersburg	Pinellas .....	....	2	73.2	95	Aug. 17†	37	Feb. 15
Sanford	Seminole	104	27	71.6	98	Aug. 17	29	Dec. 17
Tampa	Hillsborough ...	104	27	72.0	95	Aug. 17	36	Feb. 15
Tarpon Springs	Pinellas	20	32	71.4	96	June 2†	29	Feb. 16
Titusville	Brevard	16	21	71.5	97	Aug. 14	30	Dec. 17
Southern Division, Arcadia	DeSoto	61	16	....	97	Aug. 20	29	Mar. 17

Avon Park	DeSoto	150	18	72.9	96	Aug. 17	35	Mar. 5
Boca Grande	Lee	11	1	....	96	Aug. 17	..	....
Bradentown	Manatee	22	33	71.2	95	July 24†	30	Mar. 5
Davie	Broward	10	4	....	94	July 15	32	Feb. 28
Eddy	Lee .....	..	1	....	95	May 22†	..	....
Fort Lauderdale	Broward	10	4	74.8	94	July 13†	38	Feb. 28
Fort Myers	Lee	12	45	73.4	96	Aug. 17	34	Dec. 17
Griffin	Broward	12	4	....	94	June 7	33	Feb. 28
Homestead	Dade	13	7	....	95	Aug. 18	37	Dec. 17
Hypoluxo	Palm Beach	9	22	74.6	97	July 20	38	Feb. 26†
Key West	Monroe	15	46	76.7	91	Aug. 18	61	Dec. 17
Nock No. 1	Broward .....	..	..	....	..	....	..	....
Long Key	Monroe	9	1	....	95	June 16†	52	Dec. 16
Miami (1)	Dade	83	15	74.1	91	Aug. 18	42	Dec. 16
Miami (2)	Dade	10	6	....	94	Aug. 15	40	Mar. 9†
Punta Gorda	DeSoto	7	3	....	95	June 19†	34	Feb. 17†
Ritta	Palm Beach	18	4	73.7	97	Aug. 17	35	Dec. 17
Sand Key	Monroe	42	11	76.0	89	June 26†	53	Feb. 15
Western Division.								
Apalachicola	Franklin	24	13	69.4	98	Aug. 18	28	Feb. 3
Bonifay	Holmes	111	11	....	99	May 12†	22	Nov. 17
DeFuniak Springs	Wallon	193	19	....	99	May 27†	23	Feb. 3
Garniers (near)	Okaloosa	22	4	....	99	May 27	23	Feb. 3†
Marianna	Jackson	120	15	67.2	100	May 11†	22	Nov. 17
Molino	Escambia	49	15	66.6	96	May 26†	26	Feb. 3
Panama City	Bay .....	..	..	....	..	....	28	Jan. 18†
Pensacola	Escambia	151	37	67.8	92	May 27†	23	Feb. 3
St. Andrews	Bay	14	20	....	..	....	..	....
Wausau	Washington	250	18	....	101	Aug. 18	..	....

† On other dates also.

CLIMATOLOGICAL DATA FOR THE YEAR 1916.

STATIONS.	COUNTIES.	PRECIPITATION, IN INCHES						Number of Rainy Days.	SKY			Prevailing Wind Direction.
		Length of Record. years.	Total for Year.	Greatest Monthly.	Month.	Least Monthly.	Month.		Number of Clear Days.	Number of Partly Cloudy Days.	Number of Cloudy Days.	
Northern Division.												
Archer	Alachua	31	42.03	9.24	Dec.	0.12	Feb.	85	...	...	...	...
Bristol	Liberty	7	.....	.....	.....	.....	.....	...	...	...	...	sw.
Carrabelle	Franklin	18	.....	.....	.....	.....	.....	...	...	...	...	...
Cedar Keys	Levy	30	30.12	5.66	Dec.	0.45	Mar.	46	190	114	62	w.
Crescent City	Putnam	18	43.69	11.00	June	0.00	Mar.	121	100	154	112	se.
Federal Point	Putnam	25	41.16	8.42	Dec.	0.59	Jan.	131	172	135	59	e.
Fenholloway	Taylor	10	66.71	13.20	Dec.	0.68	Mar.	96	102	194	70	se.
Fernandina	Nassau	24	.....	.....	.....	0.48	Feb.	...	...	...	...	ne.
Gainesville	Alachua	28	46.20	8.00	July	0.22	Feb.	129	81	231	54	sw.
Hilliard	Nassau	8	39.79	8.06	Dec.	0.77	Mar.	102	...	...	...	...
Jacksonville	Duval	46	42.85	7.47	Dec.	0.19	Feb.	127	139	132	95	se.
Jasper	Hamilton	16	.....	.....	.....	.....	.....	...	...	...	...	...
Johnstown	Bradford	19	43.56	9.42	Dec.	0.42	Mar.	85	...	...	...	...
Lake City	Columbia	33	47.11	12.08	Dec.	0.81	April	97	107	138	121	ne.
Live Oak	Suwannee	21	.....	.....	.....	.....	.....	...	...	...	...	...
Macclenny	Baker	21	42.10	8.24	Dec.	1.14	Jan.	82	...	...	...	e.

Madison	Madison	17	50.86	10.26	July	1.06	Mar.	103	118	64	184	sw.
Melrose	Alachua	3	45.20	9.48	July	0.40	Mar.	90	174	136	56	....
Middleburg	Clay	16	42.54	7.00	Dec.	0.00	Mar.	80	...	...	...	....
Monticello	Jefferson	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	sw.
Morton's Farm.....	Duval	2	.....	.....	.....	0.08	Feb.	...	...	...	...	....
Mount Pleasant...	Gadsden	11	48.84	13.55	July	1.42	May	91	...	...	...	nw.
Newport	Wakulla	17	.....	.....	.....	.....	.....	...	...	...	...	....
Quincy	Gadsden	2	.....	.....	.....	.....	.....	...	...	...	...	....
St. Augustine.....	St. Johns....	48	37.60	8.11	Oct.	0.40	April	90	...	...	...	ne.
Satsuma Heights..	Putnam	9	51.07	11.00	Aug.	0.21	Mar.	104	122	144	100	ne.
Switzerland	St. Johns....	25	43.52	11.68	Aug.	0.51	Feb.†	100	...	...	...	....
Tallahassee	Leon	32	57.99	15.02	July	1.73	Mar.	109	190	80	96	s.
Central Division.												
Bartow	Polk	30	41.00	8.16	Aug.	0.14	Feb.	120	147	128	91	ne.
Bassenger (near)..	Osceola	4	35.25	8.89	June	0.20	Jan.	83	83	188	95	ne.
Brooksville (1)	Hernando	25	.....	.....	.....	.....	.....	...	...	...	...	....
Brooksville (2)	Hernando	5	51.72	10.76	July	0.60	Jan.	122	188	105	73	w.
Clermont	Lake	24	38.00	6.94	May	0.27	Feb.	...	...	...	...	....
Coleman	Sumter	1	.....	.....	.....	.....	.....	...	...	...	...	....
DeLand	Volusia	14	54.68	8.20	Aug.	0.74	Feb.	124	...	...	...	e.
Eustis	Lake	26	47.47	10.16	July	0.66	Feb.	114	236	64	66	ne.
Fellsmere	St. Lucie....	5	53.96	9.44	Oct.	0.72	Mar.	138	186	119	61	e.
Fort Meade	Polk	34	40.38	9.84	June	0.15	Jan.	75	...	...	...	ne.
Fort Pierce	St. Lucie....	22	45.10	10.34	Oct.	0.60	Mar.	108	144	172	50	se.
Inverness	Citrus	18	40.39	8.03	Aug.	0.42	Jan.	72	165	146	55	ne.
Isleworth	Orange	1	.....	.....	.....	.....	.....	...	...	...	...	....
Kissimmee	Osceola	25	47.02	8.37	June	0.39	Feb.	73	174	99	93	e.
Lakeland	Polk	2	43.57	8.15	July	0.20	Feb.	69	...	...	...	e.
Lucerne Park.....	Polk	5	49.79	11.33	Aug.	0.19	Mar.	96	72	241	53	ne.
Lynne (near).....	Marion	3	44.42	10.07	June	0.27	Jan.	115	...	...	...	ne.
Malabar	Brevard	25	48.77	12.46	Oct.	0.15	Mar.	112	...	...	...	so.

CLIMATOLOGICAL DATA FOR THE YEAR 1916—Continued.

STATIONS.	COUNTIES	PRECIPITATION, IN INCHES						SKY					Prevailing Wind Direction.
		Length of Record, years.	Total for Year.	Greatest Monthly.	Month.	Least Monthly.	Month.	Number of Rainy Days.	Number of Clear Days.	Number of Partly Cloudy Days.	Number of Cloudy Days.		
McDonald	Orange	14	40.57	7.60	Sept.	0.26	Feb.	123	288	54	24	sw.	
Merritts Island	Brevard	38	47.78	8.77	Oct.	2.36	Feb.	115	240	83	43	ne.	
New Smyrna	Volusia	33	39.77	8.53	Oct.	0.39	Feb.	118	122	211	33	se.	
Ocala	Marion	25	48.98	9.02	June	0.12	Jan.	111	...	...	...	...
Orange City	Volusia	26	48.00	8.79	Sept.	0.51	Feb.	117	164	163	39	se.	
Orlando	Orange	25	48.52	8.31	July	0.28	Mar.	128	198	135	33	s.	
Pinellas Park	Pinellas	5	35.33	6.32	Nov.	0.31	Mar.	75	257	76	33	nw.	
Plant City	Hillsboro	24	.....	.....	.....	.....	.....	...	...	...	...	...
Rockwell	Marion	17	.....	.....	.....	.....	.....	...	...	...	...	...
St. Cloud	Osceola	3	31.00	4.95	July	0.20	Feb.	76	...	...	...	sw.
St. Leo	Pasco	22	50.55	11.15	Aug.	0.44	Feb.	110	197	112	57	e.	
St. Petersburg	Pinellas	2	37.61	8.82	Sept.	0.24	Mar.	94	181	120	65	ne.	
Sanford	Seminole	9	45.84	11.31	July	0.14	Feb.	113	191	86	89	ne.	
Tampa	Hillsboro	27	40.02	8.76	Aug.	0.29	Jan.	90	132	143	91	ne.	
Tarpon Springs	Pinellas	25	42.83	9.99	Sept.	0.51	Jan.	71	193	120	53	w.	
Titusville	Brevard	21	43.59	8.20	Sept.	0.33	Mar.	147	149	137	80	se.	
Southern Divlsion.													
Arcadia	DeSoto	16	.....	.....	.....	0.00	Jan.*	...	...	...	...	...

Avon Park	DeSoto	18	46.32	8.83	June	0.12	Feb.	104	164	158	44	ne.
Boca Grande	Lee	1	42.24	7.78	Sept.	0.00	Jan.	67	...	...	...	se.
Bradentown	Manatee	33	41.89	8.95	Aug.	0.47	Jan.	74	222	92	52	nw.
Davle	Broward	4	57.96	10.55	June	0.58	Mar.	145	249	65	52	e.
Eddy	Lee	1	...	...	...	...	...	...	...	...	...	...
Fort Lauderdale	Broward	4	51.38	7.90	Oct.	0.67	Dec.	150	143	184	39	e.
Fort Myers	Lee	50	52.43	12.56	July	0.05	Jan.	104	...	...	...	ne.
Griffin	Broward	4	57.96	12.57	Aug.	0.42	Mar.	114	202	126	38	e.
Homestead	Dade	7	65.11	14.34	Oct.	0.33	Mar.	119	179	82	105	e.
Hypoluxo	Palm Beach	22	50.81	10.51	Oct.	0.48	Dec.	117	184	139	43	se.
Key West	Monroe	46	33.01	10.89	July	0.10	Dec.	87	183	130	48	e.
Lock No. 1	Broward	4	57.71	9.43	Aug.	0.56	Mar.	114	218	60	88	e.
Long Key	Monroe	1	...	...	...	...	...	...	...	...	...	...
Miami (1)	Dade	26	42.68	10.10	Aug.	0.25	Dec.	124	121	144	101	e.
Miami (2)	Dade	6	48.71	9.90	Aug.	0.28	Mar.	127	...	...	...	se.
Punta Gorda	DeSoto	3	45.53	9.01	July	0.28	Feb.	73	...	...	...	se.
Ritita	Palm Beach	4	36.12	7.03	July	0.19	Jan.	108	237	85	44	ne.
Sand Key	Monroe	11	24.46	7.95	July	0.18	Dec.	92	193	127	46	e.
Western Division.												
Apalachicola	Franklin	13	59.48	13.41	Dec.	1.39	Jan.	101	173	100	93	n.
Bonifay	Holmes	11	66.63	30.57	July	1.47	Feb.	77	...	...	...	nw.
DeFuniak Springs	Walton	19	...	21.65	July	...	...	...	...	...	...	sw.
Garniers (near)	Okaloosa	4	71.32	21.65	July	2.01	Jan.	78	...	...	...	se.
Marianna	Jackson	15	53.15	18.85	July	1.00	Mar.	98	173	149	44	ne.
Molino	Escambia	15	73.29	20.96	July	1.20	Oct.	62	231	41	94	n.
Panama City	Bay	20	...	10.54	July	0.44	May	...	...	...	...	sw.
Pensacola	Escambia	37	59.70	14.90	July	0.53	Mar.	116	142	114	110	ne.
St. Andrews	Bay .....	...	...	...	...	...	...	...	...	...	...	...
Wausau	Washington	18	...	...	...	...	...	...	...	...	...	...

† On other dates also.

* In February also.

‡ In March also.

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Precipitation for the Year 1916, with Departures from the Normal.

Stations.	January.		February.		March.	
	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.
Northern Division.						
Archer	0.66	— 2.81	0.12	— 3.42	0.38	— 2.99
Bristol			1.15		1.68	
Carrabelle	1.47	— 1.86	1.71	— 2.72		
Cedar Keys	0.47	— 3.09	0.58	— 2.14	0.45	— 2.47
Crescent City	0.64	— 2.06	0.63	— 3.01	0.00	— 2.83
Federal Point	0.59	— 2.31	0.78	— 2.54	0.69	— 2.42
Fenholloway	1.29		1.06		0.68	
Fernandina	1.38	— 1.49	0.48	— 3.56	0.68	— 2.60
Gainesville	0.61	— 2.75	0.22	— 2.79	0.82	— 2.42
Hilliard	0.90	— 2.22	0.19	— 3.24	0.59	— 2.93
Jacksonville	0.90	— 2.22	0.19	— 3.24	0.59	— 2.93
Jasper						
Johnstown	1.08	— 1.53	0.59	— 3.28	0.42	— 2.63
Lake City	1.70	— 1.91	0.94	— 3.23	0.97	— 3.23
Live Oak			1.70	— 2.78	0.50	— 3.60
Macclenny	1.14	— 1.44	1.14	— 2.91	1.16	— 2.54
Madison	1.26	— 2.50	2.37	— 2.23	1.06	— 2.62
Melrose	0.58		0.68		0.40	
Middleburg	1.14	— 1.74	0.56	— 3.08	0.00	— 3.91
Monticello	1.77	— 2.42	1.80	— 2.64	0.74	— 2.33
Morton's Farm	0.89		0.03		0.85	
Mount Pleasant	3.23		1.78		1.75	
Newport	0.70	— 2.96	1.42	— 2.52	1.16	— 4.60
Quincy						
St. Augustine	0.83	— 1.88	0.77	— 2.22	0.67	— 2.31
Satsuma Heights	0.57		0.29		0.21	
Switzerland	1.53	— 1.12	0.51	— 2.82	0.51	— 2.91
Tallahassee	2.22	— 1.72	2.40	— 2.53	1.73	— 3.15
Central Division.						
Bartow	0.56	— 1.97	0.14	— 2.74	1.26	— 1.16
Bassenger (near)	0.20		0.57		1.09	
Brooksville (1)						
Brooksville (2)	0.60		1.14		1.05	
Clermont	0.52	— 2.28	0.27	— 2.96	0.61	— 1.45

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Precipitation for the Year 1910, with Departures from the Normal—Continued.

Stations.	January.		February.		March.	
	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.
Coleman .....	.....	.....	0.40	.....	0.94	.....
DeLand	0.92	— 2.14	0.74	— 2.63	0.85	— 1.58
Eustis	0.78	— 2.33	0.66	— 2.38	1.81	— 0.81
Fellsmere	1.52	.....	2.99	.....	0.72	.....
Fort Meade	0.15	— 2.44	0.18	— 2.46	0.40	— 2.35
Fort Pierce	1.78	— 1.61	2.05	— 0.81	0.60	— 2.24
Inverness	0.42	— 2.35	0.65	— 2.64	0.57	— 2.24
Isleworth .....	.....	.....	.....	.....	0.80	.....
Kissimmee	0.63	— 2.30	0.39	— 3.21	0.49	— 1.81
Lakeland	1.33	.....	0.20	.....	0.22	.....
Lucerne Park	0.84	.....	0.20	.....	0.19	.....
Lynne (near)	0.27	.....	0.63	.....	0.93	.....
Malabar	2.03	— 0.83	3.03	+ 0.68	0.15	— 1.93
McDonald*	0.72	— 2.17	0.26	— 2.73	0.76	— 1.23
Merritts Island	1.42	— 1.66	0.36	— 2.27	0.76	— 1.72
New Smyrna	1.01	— 2.29	0.39	— 2.61	0.99	— 1.92
Ocala	0.12	— 2.39	0.86	— 2.41	1.81	— 1.02
Orange City	1.16	— 1.44	0.51	— 2.17	1.54	— 1.15
Orlando	1.08	— 1.64	0.63	— 2.11	0.28	— 2.06
Pinellas Park	0.48	.....	0.97	.....	0.31	.....
Plant City	0.84	— 1.76	0.40	— 2.87	0.32	— 2.11
Rockwell	0.80	— 2.31	1.20	— 2.19	1.20	— 1.82
St. Cloud	0.58	.....	0.20	.....	0.33	.....
St. Leo	0.71	— 2.83	0.44	— 3.16	1.14	— 1.42
St. Petersburg	0.27	.....	0.93	.....	0.24	.....
Sanford	0.55	.....	0.14	.....	1.53	.....
Tampa	0.29	— 2.51	0.85	— 2.42	0.83	— 1.98
Tarpon Springs	0.51	— 2.36	0.95	— 2.20	0.62	— 1.78
Titusville	1.03	— 1.15	0.44	— 2.87	0.38	— 2.22
Southern Division.						
Arcadia	0.00	— 2.39	0.00	— 2.33	0.93	— 2.06
Avon Park	0.20	— 2.17	0.12	— 2.74	0.26	— 1.91
Boca Grande	0.00	.....	0.32	.....	1.20	.....
Bradentown	0.47	— 2.45	0.98	— 2.13	0.68	— 1.81
Davie	1.93	.....	2.37	.....	0.58	.....
Eddy	0.40	.....	0.05	.....	.....	.....

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Precipitation for the Year 1916, with Departures from the Normal—Continued.

Stations.	January.		February.		March.	
	Precipitation.	Departure.	Precipitation.	Temperature.	Precipitation.	Departure.
Fort Lauderdale	2.62	.....	3.62	.....	0.77	.....
Fort Myers	0.05	— 2.20	0.51	— 1.72	1.01	— 1.04
Griffin	1.08	.....	1.49	.....	0.42	.....
Homestead	0.82	.....	1.93	.....	0.33	.....
Hypoluxo	3.07	— 0.30	1.72	— 1.66	0.64	— 1.80
Key West	1.37	— 0.61	0.42	— 1.22	0.63	— 0.85
Lock No. 1	3.22	.....	1.87	.....	0.56	.....
Long Key .....	.....	.....	.....	.....	.....	.....
Miami (1)	1.44	— 2.01	3.69	+ 0.99	0.28	— 2.44
Miami (2)	1.73	.....	4.87	.....	0.28	.....
Punta Gorda	0.48	.....	0.28	.....	0.99	.....
Ritta	0.19	.....	0.25	.....	0.80	.....
Sand Key	1.65	.....	1.26	.....	0.58	.....
Western Division.						
Apalachicola	1.39	— 2.79	2.90	— 0.60	1.60	— 1.25
Bonifay	2.23	— 2.18	1.47	— 3.83	2.34	— 1.69
DeFuniak Springs	2.31	— 1.58	4.24	— 2.50	3.76	— 1.45
Garniers (near)	2.01	.....	3.38	.....	2.90	.....
Marianna	2.43	— 1.03	1.67	— 3.84	1.00	— 4.29
Molino	4.40	— 0.25	3.22	— 2.86	2.82	— 2.85
Panama City	2.85	— 0.53	0.78	— 3.92	1.61	— 2.20
Pensacola	1.72	— 2.32	2.17	— 2.32	0.53	— 4.83
St. Andrews .....	.....	.....	.....	.....	.....	.....
Wausau	1.68	— 2.20	3.05	— 1.88	1.79	— 3.57

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Precipitation for the Year 1916, with Departures from the Normal—Continued.

Stations.	April.		May.		June.	
	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.
Northern Division.						
Archer	1.19	— 1.00	3.53	— 0.16	4.64	— 3.08
Bristol	4.42	.....	2.27	.....	4.37	.....
Carrabelle	4.21	+ 1.90	1.38	— 1.34	4.89	+ 0.02
Cedar Keys	1.15	— 0.56	2.51	+ 0.72	5.16	— 0.53
Crescent City	1.04	— 1.04	5.42	+ 1.55	11.00	+ 5.21
Federal Point	0.88	— 1.73	3.82	+ 0.08	7.45	+ 1.46
Fenholloway	2.11	.....	4.94	.....	10.21	.....
Fernandina	0.98	— 1.51	3.00	— 0.39	5.91	+ 1.01
Gainesville	1.20	— 0.71	5.15	+ 2.05	6.15	— 0.55
Hilliard	1.41	.....	3.73	.....	4.83	.....
Jacksonville	0.46	— 2.26	3.32	— 0.93	6.45	+ 0.92
Jasper .....	.....	.....	.....	.....	.....	.....
Johnstown	1.20	— 0.77	3.43	— 0.11	5.64	— 0.90
Lake City	0.81	— 1.80	4.87	+ 1.76	7.26	+ 0.41
Live Oak	1.68	— 0.39	3.24	— 0.70	3.63	— 0.90
Macleenny	1.18	— 1.56	4.46	+ 0.32	5.13	— 0.54
Madison	2.69	— 0.18	1.24	— 2.89	5.49	— 0.36
Melrose	0.60	.....	4.14	.....	8.24	.....
Middleburg	0.31	— 2.48	3.80	— 1.53	6.96	+ 0.09
Monticello	3.63	+ 0.41	1.90	— 2.02	7.70	+ 1.01
Morton's Farm	0.73	.....	3.14	.....	5.52	.....
Mount Pleasant	3.06	.....	1.42	.....	7.00	.....
Newport .....	.....	.....	.....	.....	.....	.....
Quincy .....	.....	.....	.....	.....	.....	.....
St. Augustine	0.40	— 2.24	2.15	— 1.25	6.07	+ 0.90
Satsuma Heights	0.71	.....	6.44	.....	6.60	.....
Switzerland	0.70	— 1.87	4.56	+ 1.26	5.50	+ 0.12
Tallahassee	3.86	+ 0.71	1.67	— 2.06	8.55	+ 2.09
Central Division.						
Bartow	2.88	+ 1.02	4.75	+ 1.08	5.45	— 2.56
Bassenger (near)	1.54	.....	2.07	.....	3.89	.....
Brooksville (1)	2.39	+ 0.30	3.61	+ 0.29	6.63	— 1.79
Brooksville (2)	2.34	.....	4.37	.....	4.40	.....
Clermont	1.67	— 0.33	6.94	+ 3.36	4.53	— 2.10

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Precipitation for the Year 1916, with Departures from the Normal—Continued.

Stations.	April.		May.		June.	
	Precipitation.	Departure.	Temperature.	Departure.	Temperature.	Departure.
Coleman	.....	.....	.....	.....	.....	.....
DeLand	1.25	— 0.84	5.04	+ 1.36	7.19	— 0.14
Eustis	1.05	— 1.15	3.84	+ 0.34	3.79	— 2.36
Fellsmere	2.97	.....	7.55	.....	5.58	.....
Fort Meade	4.42	+ 2.43	4.85	+ 0.40	9.84	+ 0.46
Fort Pierce	1.84	— 0.65	4.04	— 0.11	5.75	— 1.55
Inverness	1.41	— 0.66	2.96	— 1.22	6.44	+ 0.34
Isleworth	3.09	.....	6.21	.....	5.38	.....
Kissimmee	1.69	— 0.37	5.22	+ 1.41	3.37	+ 1.48
Lakeland	2.15	.....	5.09	.....	6.63	.....
Lucerne Park	2.36	.....	6.35	.....	5.34	.....
Lynne (near)	1.50	.....	3.94	.....	10.07	.....
Malabar	2.92	+ 0.91	4.63	+ 0.58	6.80	+ 1.38
McDonald*	1.70	— 0.23	2.97	— 0.56	5.82	+ 0.57
Merritts Island	2.21	— 0.48	5.06	+ 1.31	7.04	+ 0.53
New Smyrna	0.70	— 1.35	1.92	— 1.38	5.08	— 0.42
Ocala	2.33	+ 0.41	2.64	— 0.99	9.02	+ 1.56
Orange City	1.05	— 0.60	4.40	+ 0.95	6.34	— 0.43
Orlando	2.59	+ 0.57	5.10	+ 1.29	6.87	— 0.39
Pinellas Park	3.32	.....	2.14	.....	4.13	.....
Plant City	1.48	— 0.48	3.52	— 0.70	9.37	+ 1.22
Rockwell	1.27	— 0.48	.....	.....	8.01	+ 0.95
St. Cloud	1.50	.....	3.36	.....	4.82	.....
St. Leo	4.28	+ 2.29	3.19	— 0.64	5.70	— 3.12
St. Petersburg	3.32	.....	2.01	.....	2.73	.....
Sanford	0.99	.....	3.45	.....	7.23	.....
Tampa	3.06	+ 1.21	1.71	— 1.21	6.58	— 1.76
Tarpon Springs	2.51	+ 0.79	1.58	— 0.92	3.57	— 3.36
Titusville	1.95	+ 0.11	4.23	— 0.55	6.39	— 0.91
Southern Division.						
Arcadia	.....	.....	.....	.....	.....	.....
Avon Park	4.37	+ 2.42	3.25	— 1.61	8.83	— 0.51
Boea Grande	1.74	.....	3.77	.....	2.56	.....
Bradentown	4.87	+ 2.99	3.42	+ 0.39	4.19	— 4.00
Davie	4.40	.....	5.08	.....	10.55	.....
Eddy	1.67	.....	4.93	.....	12.92	.....

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Precipitation for the Year 1916, with Departures from the Normal—Continued.

Stations.	April		May		June	
	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.
Fort Lauderdale	4.45	.....	6.46	.....	4.49	.....
Fort Myers	5.61	+ 3.31	2.53	— 1.36	9.36	+ 0.19
Griffin	4.46	.....	5.76	.....	8.10	.....
Homestead	3.99	.....	5.55	.....	13.54	.....
Hypoluxo	1.15	— 1.58	6.54	+ 0.59	8.29	— 0.53
Key West	0.24	— 1.06	2.69	— 0.67	1.86	— 2.39
Lock No. 1	3.81	.....	4.83	.....	7.91	.....
Long Key .....	.....	.....	.....	.....	0.38	.....
Miami (1)	0.39	— 2.20	5.99	— 0.38	6.36	— 1.53
Miami (2)	0.57	.....	6.08	.....	6.51	.....
Punta Gorda	2.41	.....	2.46	.....	3.48	.....
Ritta	1.23	.....	2.69	.....	6.78	.....
Sand Key	0.28	.....	4.11	.....	0.46	.....
Western Division.						
Apalachicola	2.88	+ 0.40	1.91	— 1.52	5.70	+ 0.78
Bonifay	3.31	— 0.60	4.90	+ 0.78	4.89	— 0.38
DeFuniak Springs	3.24	+ 0.11	4.21	+ 0.14	3.60	— 2.07
Garniers (near)	3.46	.....	2.44	.....	4.74	.....
Marlanna	2.84	— 0.27	2.99	— 0.67	3.89	— 0.96
Mokno	4.35	— 0.52	6.30	+ 1.46	5.40	— 0.30
Panama City	5.56	+ 3.20	0.44	— 2.43	4.99	— 0.14
Pensacola	4.34	+ 1.18	5.42	+ 2.74	4.70	— 0.17
St. Andrews .....	.....	.....	.....	.....	.....	.....
Wausau	4.16	+ 1.02	3.10	— 1.35	6.24	+ 0.50

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Precipitation for the Year 1916, with Departures from the Normal—Continued.

Stations.	July.		August.		August.	
	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.
Northern Division.						
Archer	6.46	— 2.08	6.02	— 1.64	3.17	— 3.04
Bristol	16.76	.....	5.74	.....	2.84	.....
Carrabelle	6.69	+ 0.62	4.84	— 2.32	5.06	— 2.24
Cedar Keys	1.93	— 6.09	0.85	— 7.41	5.19	— 0.65
Crescent City	3.69	— 2.90	4.96	— 2.22	3.40	— 3.44
Federal Point	3.34	— 3.56	4.65	— 2.45	1.59	— 6.21
Fenholloway	12.78	.....	9.66	.....	6.53	.....
Fernandina .....	.....	.....	6.62	+ 0.46	3.10	— 5.16
Gainesville	8.00	+ 0.78	7.12	+ 0.25	3.69	— 2.03
Hilliard	7.82	.....	4.38	.....	2.03	.....
Jacksonville	3.93	— 2.27	6.76	+ 0.55	5.25	— 2.78
Jasper .....	.....	.....	.....	.....	.....	.....
Johnstown	8.22	+ 0.28	2.62	— 5.38	3.51	— 1.75
Lake City	7.49	— 0.28	2.88	— 3.78	3.27	— 2.11
Live Oak .....	.....	.....	3.63	— 3.43	.....	.....
Macleenny	6.65	— 0.58	3.48	— 3.75	1.50	— 3.60
Madison	10.26	+ 2.81	8.78	+ 1.51	4.40	— 1.12
Melrose	9.48	.....	6.92	.....	3.79	.....
Middleburg	6.59	— 0.67	6.19	— 0.45	4.16	— 2.76
Monticello	14.21	+ 7.83	4.38	— 1.86	3.88	— 2.37
Morton's Farm .....	.....	.....	.....	.....	.....	.....
Mount Pleasant	13.55	.....	3.75	.....	2.44	.....
Newport .....	.....	.....	.....	.....	.....	.....
Quincy .....	.....	.....	.....	.....	.....	.....
St. Augustine	3.75	— 1.50	2.39	— 3.66	4.33	— 2.16
Satsuma Heights	4.21	.....	11.00	.....	4.45	.....
Switzerland	4.22	— 3.25	11.68	+ 5.26	3.64	— 4.42
Tallahassee	15.02	+ 7.50	2.54	— 4.50	4.65	— 0.44
Central Division.						
Bartow	4.78	— 2.63	8.16	+ 0.27	4.34	— 3.67
Bassenger (near)	5.59	.....	5.06	.....	3.67	.....
Brooksville (1)	5.51	— 4.20	3.76	— 5.25	4.52	— 2.48

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Precipitation for the Year 1916, with Departures from the Normal—Continued.

Stations.	July.		August.		September.	
	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.
Brooksville (2).....	10.76	.....	6.47	.....	5.68	.....
Clermont	4.55	— 2.88	4.71	— 2.82	4.41	— 2.18
Coleman .....	.....	.....	.....	.....	.....	.....
DeLand	7.32	— 0.57	8.20	+ 0.76	6.54	+ 1.23
Eustis	10.16	+ 3.13	5.80	— 0.64	4.95	— 1.40
Fellsmere	5.16	.....	7.08	.....	7.68	.....
Fort Meade	4.72	— 4.33	9.18	+ 0.10	5.02	— 3.21
Fort Pierce	3.53	— 1.90	2.98	— 3.14	8.06	+ 0.97
Inverness	3.79	— 6.16	8.03	+ 0.59	2.29	— 3.49
Isleworth	6.37	.....	3.89	.....	3.55	.....
Kissimmee	7.63	+ 0.74	4.67	— 2.37	6.08	— 0.75
Lakeland	8.15	.....	6.54	.....	3.09	.....
Lucerne Park	4.39	.....	11.33	.....	4.78	.....
Lynne (near)	4.39	.....	7.01	.....	4.16	.....
Malabar	2.44	— 2.28	1.34	— 3.62	8.18	+ 0.75
McDonald*	5.56	— 1.94	3.83	— 3.12	7.60	+ 1.70
Merritts Island	6.53	+ 1.09	2.96	— 2.57	6.42	— 1.19
New Smyrna	4.36	— 1.19	2.29	— 3.61	6.13	— 1.50
Ocala	6.44	— 1.57	6.94	— 0.55	4.06	— 2.73
Orange City	7.84	+ 1.51	4.76	— 2.26	8.79	+ 2.67
Orlando	8.31	+ 1.06	5.92	— 1.23	4.95	— 2.44
Pinellas Park	4.13	.....	5.14	.....	5.14	.....
Plant City	5.19	— 2.69	7.57	— 1.66	.....	.....
Rockwell	8.55	— 0.43	7.88	— 0.88	4.66	— 0.87
St. Cloud	4.95	.....	3.65	.....	3.72	.....
St. Leo	5.09	— 3.76	11.15	+ 1.82	6.19	— 0.28
St. Petersburg	3.72	.....	5.94	.....	8.82	.....
Sanford	11.31	.....	2.20	.....	3.52	.....
Tampa	4.95	— 3.48	8.76	+ 0.17	6.28	— 1.13
Tarpon Springs	5.59	— 2.51	4.33	— 5.46	9.99	+ 2.94
Titusville	4.68	— 1.79	6.31	+ 0.92	8.20	+ 0.64
Southern Division.						
Arcadia	6.42	— 1.87	5.97	— 2.93	3.45	— 2.77
Avon Park	8.02	+ 0.17	8.38	+ 0.90	5.36	— 0.45
Boca Grande	5.85	.....	6.60	.....	7.78	.....

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Precipitation for the Year 1916, with Departures from the Normal—Continued.

Stations.	July.		August		September.	
	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.
Bradentown	4.82	— 5.60	8.95	— 0.24	5.24	— 2.36
Davie	6.35	.....	9.79	.....	7.41	.....
Eddy	7.50	.....	4.91	.....	.....	.....
Fort Lauderdale	2.64	.....	6.51	.....	6.70	.....
Fort Myers	12.56	+ 4.56	8.22	— 0.11	5.34	— 2.33
Griffin	7.41	.....	12.57	.....	7.62	.....
Homestead	10.60	.....	5.19	.....	5.14	.....
Hypoluxo	2.22	— 3.13	4.08	— 0.84	6.81	— 1.72
Key West	10.89	+ 7.30	5.04	+ 0.35	4.38	— 2.41
Lock No. 1	6.17	.....	9.43	.....	8.50	.....
Long Key	4.26	.....	4.45	.....	9.96	.....
Miami (1)	2.49	— 4.75	10.10	+ 2.50	4.81	— 4.80
Miami (2)	4.34	.....	9.90	.....	6.84	.....
Punta Gorda	9.01	.....	8.36	.....	7.44	.....
Ritta	7.03	.....	4.23	.....	4.98	.....
Sand Key	7.95	.....	2.45	.....	2.59	.....
Western Division.						
Apalachicola	12.17	+ 5.13	7.88	+ 0.03	1.97	— 7.72
Bonifay	30.57	+ 24.93	4.24	— 0.44	1.77	— 3.16
DeFuni Springs	21.65	+ 14.20	5.57	— 3.67	2.03	— 4.34
Garniers (near)	21.65	.....	9.29	.....	4.39	.....
Marianna	18.85	+ 12.23	5.04	— 0.42	3.15	— 2.82
Molino	20.96	+ 13.48	7.02	— 0.14	4.50	— 3.31
Panama City	10.54	+ 3.63	6.70	— 1.80	7.20	+ 0.05
Pensacola	17.90	+ 10.63	6.53	— 0.63	2.58	— 2.65
St. Andrews .....	.....	.....	.....	.....	.....	.....
Wausau	13.08	+ 5.82	2.65	— 4.62	2.45	— 4.29

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Precipitation for the Year 1916, with Departures from the Normal—Continued.

Stations.	October.		November.		December.	
	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.
Northern Division.						
Archer	2.36	— 0.48	4.26	+ 2.07	9.24	+ 5.90
Bristol	2.93	.....	2.03	.....	7.51	.....
Carrabelle	3.91	+ 0.79	1.36	— 0.82	9.93	+ 4.64
Cedar Keys	3.35	+ 0.23	2.82	+ 0.50	5.66	+ 3.08
Crescent City	4.18	+ 0.42	3.11	+ 1.58	5.62	+ 3.02
Federal Point	4.75	— 0.20	4.20	+ 2.16	8.42	+ 5.57
Fenbolloway	2.98	.....	1.27	.....	13.20	.....
Fernandina	6.51	+ 1.41	1.99	— 0.61	6.29	+ 2.93
Gainesville	2.04	— 0.64	3.95	+ 2.06	7.25	+ 4.20
Hilliard	2.99	.....	1.42	.....	8.06	.....
Jacksonville	4.77	— 0.29	2.76	+ 0.57	7.47	+ 4.48
Jasper .....	.....	.....	.....	.....	.....	.....
Johnstown	4.67	+ 1.62	2.76	+ 1.11	9.42	+ 6.01
Lake City	3.26	+ 0.23	1.58	— 0.96	12.08	+ 8.46
Live Oak .....	.....	.....	.....	.....	.....	.....
Macclenny	5.58	+ 2.54	2.44	+ 0.85	8.24	+ 4.92
Madison	3.32	+ 0.42	1.58	— 0.56	8.41	+ 4.63
Melrose	2.01	.....	3.71	.....	6.65	.....
Middleburg	2.67	— 1.65	3.16	+ 1.70	7.00	+ 3.94
Monticello .....	.....	.....	.....	.....	.....	.....
Morton's Farm .....	.....	.....	.....	.....	.....	.....
Mount Pleasant	2.33	.....	1.87	.....	6.66	.....
Newport .....	.....	.....	.....	.....	.....	.....
Quincy	3.48	.....	1.78	.....	6.87	.....
St. Augustine	8.11	+ 3.15	3.89	+ 1.52	4.33	+ 1.65
Satsuma Heights	3.73	.....	3.91	.....	8.35	.....
Switzerland	5.28	+ 0.90	2.35	+ 0.19	3.04	+ 0.16
Tallahassee	4.67	+ 1.52	2.27	— 0.38	8.41	+ 3.81
Central Division.						
Bartow	3.10	— 0.59	3.63	+ 1.85	1.95	— 0.44
Bassenger (near)	2.84	.....	2.28	.....	1.45	.....
Brooksville (1)	2.97	— 0.40	9.31	+ 7.54	4.18	+ 1.70
Clermont	2.64	— 0.90	4.18	+ 2.68	3.28	+ 0.97

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Precipitation for the Year 1916, with Departures from the Normal—Continued.

Stations.	October.		November.		December.	
	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.
Brooksville (2).....	1.70	.....	8.90	.....	4.31	.....
Coleman .....	.....	.....	6.62	.....	5.41	.....
DeLand	6.92	+ 2.03	7.09	+ 5.40	2.60	+ 0.48
Eustis	5.51	+ 2.12	7.02	+ 5.45	2.10	- 0.22
Fellsmere	9.44	.....	2.18	.....	1.03	.....
Fort Meade	2.89	- 1.16	2.93	+ 1.38	1.80	- 0.53
Fort Pierce	10.34	+ 4.18	2.94	- 0.20	1.19	- 1.08
Inverness	3.09	+ 0.32	6.33	+ 4.61	4.41	+ 1.63
Isleworth	2.06	.....	3.31	.....	5.74	.....
Kissimmee	2.56	- 1.92	4.08	+ 2.14	5.21	+ 2.77
Lakeland	2.33	.....	3.67	.....	4.17	.....
Lucerne Park	5.12	.....	5.79	.....	3.10	.....
Lynne (near).....	1.40	.....	5.40	.....	4.67	.....
Malabar	12.46	+ 5.35	2.57	+ 0.20	2.22	- 0.58
McDonald*	4.07	- 0.38	4.90	+ 2.71	2.35	+ 0.21
Merritts Island	8.77	+ 2.96	3.89	+ 1.60	2.36	- 0.09
New Smyrna	8.53	+ 2.54	5.81	+ 3.02	2.56	+ 0.05
Ocala	3.18	+ 0.39	5.28	+ 3.52	6.25	+ 3.77
Orange City	4.50	+ 0.09	6.30	+ 4.54	0.81	- 1.15
Orlando	4.58	- 0.57	4.60	+ 3.01	3.61	+ 1.46
Pinellas Park	1.01	.....	6.32	.....	2.24	.....
Plant City .....	.....	.....	3.02	+ 1.51	2.24	- 0.12
Rockwell .....	.....	.....	.....	.....	.....	.....
St. Cloud	2.78	.....	2.25	.....	2.85	.....
St. Leo	1.07	- 2.26	6.22	+ 4.25	5.37	+ 2.63
St. Petersburg	0.84	.....	5.71	.....	3.08	.....
Sanford	6.91	.....	5.96	.....	2.02	.....
Tampa	0.77	- 2.20	4.34	+ 2.62	1.60	- 0.42
Tarpon Springs	0.78	- 1.99	8.18	+ 6.25	4.22	+ 1.78
Titusville	8.10	+ 2.63	3.86	+ 1.41	3.02	+ 0.24
Southern Division.						
Arcadia	2.87	- 0.93	3.53	+ 2.15	1.80	- 0.42
Avon Park	2.72	- 1.67	2.94	+ 1.23	1.87	- 0.35
Boca Grande	3.47	.....	4.05	.....	4.90	.....
Bradentown	2.02	- 1.00	4.10	+ 2.39	2.15	- 0.44

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Precipitation for the Year 1916, with Departures from the Normal—Continued.

Stations.	October.		November.		December.	
	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.
Davie	5.32	.....	3.57	.....	0.61	.....
Eddy .....	.....	.....	.....	.....	.....	.....
Fort Lauderdale	7.90	.....	4.55	.....	0.67	.....
Fort Myers	2.05	— 1.42	3.01	+ 1.71	2.18	+ 0.46
Griffin	5.37	.....	3.20	.....	0.48	.....
Homestead	14.34	.....	3.30	.....	0.88	.....
Hypoluxo	10.51	+ 0.30	5.30	+ 1.88	0.48	— 1.95
Key West	3.38	— 2.00	2.01	— 0.35	0.10	— 1.74
Lock No. 1	6.56	.....	4.25	.....	0.60	.....
Long Key	4.06	.....	1.56	.....	0.62	.....
Miami (1)	5.03	— 5.51	1.85	— 0.70	0.25	— 1.99
Miami (2)	4.82	.....	2.44	.....	0.33	.....
Punta Gorda	1.36	.....	5.97	.....	3.29	.....
Ritita	4.20	.....	2.35	.....	1.39	.....
Sand Key	1.36	.....	1.59	.....	0.18	.....
Western Division.						
Apalachicola	6.17	+ 2.63	1.50	— 1.19	13.41	+ 8.48
Bonlfay	2.20	— 0.58	1.93	— 0.81	6.77	+ 2.34
DeFuniak Springs	2.30	— 1.27	2.60	— 1.03	.....	.....
Garniers (near)	3.00	.....	3.49	.....	10.51	.....
Marianna	2.07	— 0.94	2.45	— 0.13	6.77	+ 2.46
Mollho	1.20	— 2.11	3.37	— 0.21	9.75	+ 3.63
Panama City	3.60	— 0.62	.....	.....	.....	.....
Pensacola	1.32	— 2.76	3.01	— 0.73	9.48	+ 5.31
St. Andrews .....	.....	.....	3.23	+ 0.20	7.94	2.79
Wausau	2.40	— 0.43	.....	.....	.....	.....

*Formerly Grasmere.

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Precipitation for the Year 1916, with Departures from the Normal—Continued.

Stations.	Annual.	
	Precipitation.	Departure.
Northern Division.		
Archer	42.03	—12.73
Bristol		
Carrabelle		
Cedar Keys	30.12	—18.41
Crescent City	43.69	— 5.72
Federal Point	41.16	—12.15
Fenholloway	66.71	
Fernandina		
Gainesville	46.20	— 2.55
Hilliard	39.79	
Jacksonville	42.85	—10.40
Jasper		
Johnstown	43.56	— 7.33
Lake City	47.11	— 6.44
Live Oak		
Maccleenny	42.10	— 8.29
Madison	50.86	— 3.09
Melrose	45.20	
Middleburg	42.54	—12.54
Monticello		
Morton's Farm		
Mount Pleasant	48.84	
Newport		
Quincy		
St. Augustine	37.60	+10.02
Satsuma Heights	51.07	
Switzerland	43.52	— 8.50
Tallahassee	57.99	+ 0.85
Central Division.		
Bartow	41.00	—11.54
Bassenger (near)	35.25	
Brooksville (1)		
Brooksville (2)	51.72	
Clermont	38.36	—10.89

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Precipitation for the Year 1910, with Departures from the Normal—Continued.

Stations.	Annual.	
	Precipitation.	Departure.
Coleman		
DeLand	54.68	+ 3.36
Eustis	47.41	— 0.25
Fellsmere	53.96	
Fort Meade	46.28	—11.71
Fort Pierce	45.10	— 8.14
Inverness	40.39	—1.27
Isleworth		
Kissimmee	47.02	— 1.19
Lakeland	43.57	
Lucerne Park	49.79	
Lynne (near)	44.42	
Malabar	48.77	+ 0.56
McDonald*	40.57	— 7.17
Merritts Island	47.78	— 2.44
New Smyrna	39.77	—10.66
Ocala	48.93	— 2.01
Orange City	48.00	+ 0.56
Orlando	48.52	— 3.05
Pinellas Park	35.33	
Plant City		
Rockwell		
St. Cloud	31.00	
St. Leo	50.55	— 6.43
St. Petersburg	37.61	
Sanford	45.84	
Tampa	40.02	—11.11
Tarpon Springs	42.83	— 8.82
Titusville	48.59	— 3.54
Southern Division.		
Arcadia		
Avon Park	46.32	— 6.63
Boca Grande	42.24	
Bradentown	41.89	—11.26
Davle	57.96	
Eddy		

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Precipitation for the Year 1916, with Departures from the Normal—Continued.

Stations.	Annual.	
	Precipitation.	Departure.
Fort Lauderdale	51.38	
Fort Myers	52.43	+ 0.05
Griffin	57.96	
Homestead	65.11	
Hypoluxo	50.81	—10.71
Key West	33.01	— 5.65
Lock No. 1	57.71	
Long Key		
Miami (1)	42.68	—22.82
Miami (2)	48.71	
Punta Gorda	45.53	
Ritta	36.12	
Sand Key	21.46	
Western Division.		
Apalachicola	59.48	+ 2.38
Bonifay	66.63	+14.33
DeFuniak Springs		
Garniers (near)	71.32	
Marianna	53.15	— 0.68
Molino	73.29	+ 6.02
Panama City		
Pensacola	59.70	+ 3.45
St. Andrews		
Wausau		

*Formerly Grasmere.

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Mean Temperature for the Year 1916, with
Departures from the Normal—Continued.

Stations.	January.		February.		March.	
	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.
Northern Division.						
Archer	61.8	+ 6.0	56.2 ²	— 2.2	59.4 ²	— 4.6
Bristol	60.0 ²	+ 6.8	55.0	+ 0.6	59.0 ¹	— 2.6
Carrabelle	64.8	+ 7.8	59.9	0.9	60.4	— 2.8
Cedar Keys	64.8	+ 8.3	60.2	+ 2.0	61.4	— 4.2
Crescent City	64.4	+ 7.8	59.6	1.8	60.4	— 4.0
Federal Point	61.4	.....	56.1	.....	58.6 ²	.....
Fenholloway	64.2 ¹⁰	+10.3	.....	.....	62.1 ⁵	— 0.2
Fernandina	64.2	+ 8.1	58.2	+ 1.6	60.8	— 4.1
Gainesville	61.7	.....	57.6	.....	60.8	.....
Hilliard	62.4	8.5	57.2	+ 3.3	59.5	— 2.4
Jacksonville .....	.....	.....	.....	.....	.....	.....
Jasper	61.9	+ 6.7	58.2 ¹	+ 1.7	59.0 ¹	— 5.0
Johnstown	61.1	5.7	56.0	— 1.2	60.1	— 3.3
Lake City .....	.....	.....	56.6	+ 0.7	59.8	— 3.2
Live Oak .....	.....	.....	.....	.....	.....	.....
Maccleenny	59.9	+ 5.6	55.6	+ 0.3	58.8	— 3.5
Madison	64.0 ³	+ 9.4	58.6 ¹	3.2	60.6 ¹	— 2.7
Middleburg	59.4	+ 5.3	54.8	+ 0.5	57.9 ¹	— 5.0
Monticello	61.8	.....	56.7	.....	59.3	.....
Morton's Farm	60.8	.....	54.6	.....	59.2	.....
Mount Pleasant	62.0	+ 9.2	56.4	1.8	59.4	— 0.8
Newport .....	.....	.....	.....	.....	.....	.....
Quincy	64.4	+ 8.1	58.6	0.0	61.0	— 1.9
St. Augustine	63.2 ²	.....	57.6 ¹	.....	60.7	.....
Satsuma Heights	63.0	+ 8.0	58.3 ¹	+ 2.0	60.8 ¹	— 2.6
Switzerland	60.0	7.6	55.8	+ 1.4	60.0	— 1.1
Tallahassee .....	.....	.....	.....	.....	.....	.....
Central Division.						
Bartow	66.8	+ 6.1	60.4	— 2.6	62.4	— 4.8
Bassenger (near) .....	.....	.....	.....	.....	.....	.....
Brooksville (1) .....	.....	.....	.....	.....	.....	.....
Brooksville (2)	65.0	.....	59.1	.....	60.4	.....
Clermont	68.0	+ 7.6	63.6	+ 1.6	66.0	— 2.5
Coleman .....	.....	.....	59.7	.....	61.6	.....

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Mean Temperature for the Year 1916, with
Departures from the Normal—Continued.

Stations.	January.		February.		March.	
	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.
DeLand	65.2	+ 7.0	60.4	1.3	62.1	— 3.4
Eustis	65.9	+ 7.0	60.8	0.0	63.4	— 3.4
Fellsmere	68.5		62.6		64.2	
Fort Meade	67.1 ¹	+ 7.3			62.1 ⁹	— 5.0
Fort Pierce	70.6	+ 7.9	64.4	0.5	65.0	— 3.4
Inverness	65.9	+ 9.2	59.0	+ 1.4	62.0	— 3.5
Kissimmee	67.3 ¹	+ 6.4	63.0	1.5	64.8	— 2.4
Lakeland	67.6		62.8		64.2	
Lucerne Park	67.8		63.6		65.2	
Malabar	69.6	+ 7.8	62.9 ²	— 0.3	64.2	— 3.0
McDonald	64.5	+ 6.0	59.8	— 0.5	61.0	— 5.6
Merritts Island	67.8	+ 5.8	62.3	— 1.5	63.9	— 3.3
New Smyrna					62.8	— 1.7
Ocala	63.2	+ 5.9	58.0	— 1.3	60.6	— 4.2
Orange City	64.4	+ 5.7	59.6	— 0.4	61.0	— 4.9
Orlando	66.4	+ 6.6	61.9	+ 0.6	64.7	— 2.6
Pinellas Park	67.5		61.5		61.8	
Plant City	66.4	5.9	62.4	+ 0.7	64.0	— 3.5
Rockwell	65.0 ⁸	7.2	59.1 ²	+ 1.2	61.7 ²	— 3.3
St. Cloud	66.8 ⁵		62.6		63.4	
St. Leo	66.4	+ 6.5	61.0	+ 0.1	63.0	— 4.2
St. Petersburg	68.4		63.4		64.5	
Sanford	66.1		60.8		63.2	
Tampa	67.0	+ 6.9	61.7	— 0.6	63.1	— 3.2
Tarpon Springs	66.4	+ 7.4	61.0	— 0.1	61.9	— 3.7
Titusville	66.0	6.8	61.2	— 0.5	62.4	— 2.8
Southern Division.						
Arcadia	67.9	+ 5.4	64.0 ¹	+ 0.4	64.0	— 4.3
Avon Park	68.5	+ 6.5	63.3	+ 0.2	65.6	— 2.4
Boca Grande	70.0		64.6		66.0 ³	
Bradentown	67.4	+ 6.8	61.2	— 1.0	61.2	— 5.0
Davle			63.0		63.0	
Eddy	67.8		62.8 ⁷			
Fort Lauderdale	73.8		65.8		65.4	
Fort Myers	69.0	+ 5.7	64.0	— 0.9	65.2	— 3.5
Griffin	68.8		62.5		62.8	

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Mean Temperature for the Year 1916, with
Departures from the Normal—Continued.

Stations.	January.		February.		March	
	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.
Homestead	71.8	.....	65.7	.....	66.4	.....
Hypoluxo	72.2	+ 6.2	65.8	— 0.9	65.6	— 4.7
Key West	73.8	+ 5.0	69.6	— 1.2	70.2	— 2.6
Long Key .....	.....	.....	.....	.....	.....	.....
Miami (1)	72.0	4.7	65.7	— 3.1	65.8	— 6.2
Miami (2)	73.2	.....	66.5	.....	66.2	.....
Punta Gorda	68.5	.....	65.2	.....	61.8	.....
Ritta	70.4	.....	64.2	.....	64.7	.....
Sand Key	72.6	.....	69.4	.....	69.4	.....
Western Division.						
Apalachicola	60.6	+ 5.5	56.4	0.8	60.6	— 1.9
Bonifay	60.2	+ 7.5	53.8	— 0.1	59.6	— 4.4
DeFuniak Springs	57.0 ³	+ 5.3	52.8	0.1	58.2	— 3.2
Garniers (Bear)	59.4	.....	54.8	.....	58.7 ²	.....
Marianna	59.4	+ 7.5	52.4	+ 0.3	57.8	— 2.3
Molino	58.8 ³	+ 6.7	54.6	1.3	60.8	— 0.6
Panama City	60.6 ²	+ 8.4	57.2	+ 3.3	61.5	+ 0.4
Pensacola	58.2	5.9	53.9	— 1.6	59.6	— 1.5
St. Andrews .....	.....	.....	.....	.....	.....	.....
Wausau	59.2 ²	+ 7.7	.....	.....	.....	.....

Small figures indicate number of days missing from report.

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Mean Temperature for the Year 1916, with
Departures from the Normal—Continued.

Stations.	April.		May.		June.	
	Temperature.	Departure.	Temperature.	Departure.	Departure.	Departure.
Northern Division.						
Archer	66.6 ²	— 2.0	76.5	+ 0.9	79.6 ²	— 0.6
Bristol	65.0	.....	75.4	.....	77.0	.....
Carrabelle	64.3	— 2.8	75.7	+ 0.5	77.8	— 2.5
Cedar Keys	69.0	— 0.7	76.2	+ 0.3	80.4	— 0.2
Crescent City	67.9	— 1.3	75.9	— 0.5	79.2	— 1.2
Federal Point	68.5	0.2	76.5	+ 1.8	79.9	+ 0.7
Fenholloway	65.0	.....	75.2	.....	77.6	.....
Fernandina	68.2 ¹	+ 0.7	74.8	0.8	80.4	+ 1.1
Gainesville	67.6	— 1.6	76.4	0.0	78.5	— 2.2
Hilliard	67.3	.....	75.0	.....	79.6	.....
Jacksonville	67.0	— 0.6	75.6	+ 1.4	79.4	+ 0.4
Jasper .....	.....	.....	.....	.....	.....	.....
Johnstown .....	.....	.....	75.4	+ 0.6	78.0	— 2.0
Lake City	67.4	— 1.4	76.0	0.4	78.4	— 1.5
Live Oak	67.5	— 1.3	77.2	+ 1.8	79.4	— 0.5
Macclenny	68.6 ²	— 0.6	75.5	+ 0.6	78.6	— 0.8
Madison	67.0	— 1.4	77.2	+ 1.4	79.4	— 1.0
Middleburg	67.8 ³	+ 0.6	76.6 ²	2.8	83.2 ⁴	+ 0.9
Monticello	64.8	— 2.7	74.8	— 0.5	77.4	— 2.7
Morton's Farm	65.7	.....	74.8	.....	78.0	.....
Mount Pleasant	65.6	.....	76.4	.....	78.4	.....
Newport .....	.....	.....	.....	.....	.....	.....
Quincy .....	.....	.....	.....	.....	.....	.....
St. Augustine	67.0	— 1.3	75.3 ²	+ 1.3	78.0	— 1.0
Satsuma Heights	67.6 ²	.....	76.1 ²	.....	79.1	.....
Switzerland	68.0 ²	+ 0.1	77.1 ⁴	+ 2.4	.....	.....
Tallahassee	67.0	— 0.1	76.6	2.0	78.6	— 0.5
Central Division.						
Bartow	68.6	— 2.7	76.8	— 0.1	79.0	— 1.4
Bassenger (near)	69.0 ²	.....	76.9	.....	79.4	.....
Brooksville (1)	68.0 ⁴	— 2.1	78.0 ⁴	+ 1.3	78.6 ²	— 1.5
Brooksville (2)	65.8	.....	75.4	.....	78.0	.....
Clermont	71.1	— 1.3	78.2	— 0.2	80.6	— 0.9
Coleman .....	.....	.....	.....	.....	.....	.....

CLIMATOLOGICAL DATA--Continued.

Monthly and Annual Mean Temperature for the Year 1916, with
Departures from the Normal--Continued.

Stations.	April.		May.		June.	
	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.
DeLand	67.8	- 0.7	76.6	+ 1.3	79.2	+ 0.2
Eustis	69.5	- 1.5	78.0	+ 0.6	80.6	- 0.3
Fellsmere	63.5	.....	76.4	.....	79.6	.....
Fort Meade	68.8	- 1.4	78.0	1.4	77.8	- 1.7
Fort Pierce	69.8	- 1.7	77.1	+ 1.3	80.0	+ 0.9
Inverness	68.2	- 1.4	77.4	+ 1.3	79.8	- 0.2
Kissimmee	70.4	- 1.2	78.0	+ 0.5	80.6	0.2
Lakeland	70.2	.....	77.4	.....	79.7	.....
Lucerne Park	70.8	.....	78.2	.....	81.0	.....
Malabar	69.9	- 1.5	77.2	+ 0.8	80.0	+ 0.3
McDonald	66.7	- 3.7	75.0	- 1.6	77.4	- 3.2
Merritts Island	69.8	- 1.8	76.8	+ 0.5	79.0	- 0.5
New Smyrna	66.2	- 2.3	75.0	1.1	78.5	+ 0.1
Ocala	67.3	- 2.4	75.5	- 0.6	78.2	- 1.7
Orange City	66.7	- 3.3	76.0	- 0.7	78.5	- 2.0
Orlando	70.6	- 0.4	78.3	+ 1.4	80.8	+ 0.4
Pinellas Park	67.4	.....	75.8	.....	78.6	.....
Plant City	71.9	+ 0.9	79.0	+ 2.3	79.4	- 0.9
Rockwell	68.9	- 0.7	.....	.....	79.3	- 1.0
St. Cloud	69.4	.....	77.2	.....	79.0	.....
St. Leo	68.4	- 2.4	76.2	- 1.0	78.3	- 2.1
St. Petersburg	70.1	.....	77.6	.....	80.4	.....
Sanford	68.9	.....	76.7	.....	79.6	.....
Tampa	69.0	- 2.0	76.7	0.3	79.3	- 0.7
Tarpon Springs	67.8	- 2.5	76.6	+ 1.0	78.9	- 0.8
Titusville	68.2	- 1.5	75.8	+ 0.5	78.6	- 0.4
Southern Division.						
Arcadia .....	.....	.....	.....	.....	.....	.....
Avon Park	71.4	- 0.7	78.2	+ 0.9	79.5	- 0.4
Boca Grane	71.1	.....	77.8	.....	82.1	.....
Bradentown	67.0	- 3.5	75.2	- 0.9	78.0	- 1.8
Davie	67.0	.....	75.2	.....	77.0	.....
Eddy .....	.....	.....	76.8	.....	78.6	.....
Fort Lauderdale	71.0	.....	77.8	.....	79.8	.....
Fort Myers	71.3	- 1.1	77.2	+ 0.1	79.4	- 0.6
Griffin	67.3	.....	75.4	.....	77.2	.....

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Mean Temperature for the Year 1916, with
Departures from the Normal—Continued.

Stations.	April.		May.		June.	
	Temperature.	Departure.	Temperature.	Temperature.	Temperature.	Departure.
Homestead			77.4		79.0	
Hypoluxo	70.7	— 2.3	77.2	0.0	79.1	+ 0.3
Key West	73.9	— 1.6	78.9	— 0.1	82.0	— 0.2
Long Key					84.8	
Miami (1)	70.2	— 4.0	76.7	— 1.9	79.4	— 1.0
Miami (2)			77.6		80.0	
Punta Gorda	69.1		75.0			
Ritta	70.0		76.8		79.0	
Sand Key	73.0		77.4		81.4	
Western Division.						
Apalachicola	65.6	— 2.2	76.6	+ 1.6	79.6	— 0.8
Bonifay	65.1	— 1.8	75.2	+ 1.0		
DeFuniak Springs	65.8	— 0.1	74.2	+ 3.0	79.2	— 0.5
Garniers (near)	63.4		73.0			
Marianna	64.4	— 1.7	75.7	+ 1.2	78.4	— 1.3
Molino	64.2	— 1.9	73.9	+ 1.3	77.4	— 1.5
Panama City	66.8	— 0.2	77.7	+ 2.6	81.0	+ 0.1
Pensacola	65.4	— 2.3	75.3	0.5	79.1	— 0.9
St. Andrews						
Wausau						

Small figures indicate number of days missing from report.

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Mean Temperature for the Year 1916, with
Departures from the Normal—Continued.

Stations.	July.		August.		September.	
	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.
Northern Division.						
Archer	81.3	— 0.4	81.8	+ 0.6	77.2	— 1.8
Bristol	78.6	.....	79.6 ^o	.....	76.6	.....
Carrabelle	81.2	— 0.7	80.8	— 0.6	77.2	— 1.3
Cedar Keys	81.9	— 0.4	83.4 ^a	+ 1.6	79.6	+ 0.1
Crescent City	80.9	— 1.2	80.8	— 1.1	78.3	— 1.1
Federal Point	82.0	+ 0.8	82.4	1.2	79.6	+ 1.1
Fenholloway	80.4	.....	81.4	.....	77.2	.....
Fernandina .....	.....	.....	81.5 ^a	+ 0.5	78.0	— 0.2
Gainesville	80.2	— 1.5	81.4	— 0.3	78.0	— 0.7
Hilliard	80.4	.....	81.8	.....	76.9	.....
Jacksonville	80.4	— 0.5	81.6	+ 1.5	78.8	— 0.5
Jasper .....	.....	.....	.....	.....	.....	.....
Johnstown	79.8	— 1.8	80.8	— 0.6	76.6 ^a	— 2.3
Lake City	80.0	— 0.9	80.6 ^a	— 0.3	77.2	— 1.2
Live Oak .....	.....	.....	82.2 ^a	0.6	.....	.....
Macclenny	80.0 ^a	— 1.7	81.0	— 0.6	76.4 ^a	— 2.2
Madison	80.2	— 1.2	81.8	+ 0.3	77.4	— 1.5
Middleburg	81.3 ^a	— 0.3	82.8 ^a	+ 1.7	78.2 ^a	— 0.2
Monticello	79.4	— 1.3	80.4	— 0.1	74.8	— 3.6
Morton's Farm .....	.....	.....	.....	.....	.....	.....
Mount Pleasant	79.4 ^a	.....	81.0	.....	76.5	.....
Newport .....	.....	.....	.....	.....	.....	.....
Quincy .....	.....	.....	.....	.....	.....	.....
St. Augustine	79.8	— 1.1	80.4	— 0.3	77.6	— 1.0
Satsuma Heights	81.6	.....	81.4 ^a	.....	76.8 ^a	.....
Switzerland .....	.....	.....	.....	.....	.....	.....
Tallahassee	79.2	— 1.2	81.8	+ 2.0	76.5	— 0.1
Central Division.						
Bartow	81.2	— 0.3	80.6	— 0.8	78.4	— 1.3
Bassenger (near)	80.8	.....	81.2	.....	80.0	.....
Brooksville (1)	80.2	— 0.6	80.4	— 0.5	.....	.....
Brooksville (2)	79.8	.....	80.3	.....	77.9	.....
Clermont	82.6	— 0.3	83.0	+ 0.2	.....	.....
Coleman .....	.....	.....	.....	.....	.....	.....

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Mean Temperature for the Year 1916, with
Departures from the Normal—Continued.

Stations.	July.		August.		September.	
	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.
DeLand	81.4	0.8	81.8	+ 1.2	77.0	- 1.7
Eustis	82.4	0.0	82.6	+ 0.3	78.5	- 1.3
Fellsmere	80.8	.....	80.9	.....	79.0	.....
Fort Meade	81.9	+ 1.1	81.8	+ 0.5	80.0	+ 0.3
Fort Pierce	82.2	1.6	82.2	+ 1.2	80.6	+ 0.7
Inverness	81.2	+ 0.5	81.0	+ 0.1	78.5	- 0.5
Kissimmee	82.4	+ 0.3	82.8	+ 0.6	79.6	- 0.7
Lakeland	81.4	.....	81.2	.....	79.6	.....
Lucerne Park	82.8	.....	82.5	.....	80.1	.....
Malabar	82.6	+ 1.0	82.0	+ 0.1	80.6	+ 0.2
McDonald	79.4	- 2.4	79.0	- 1.9	76.8	- 2.4
Merritts Island	80.8	- 0.5	81.3	- 0.2	79.1	- 1.0
New Smyrna	81.6	+ 1.7	81.1	+ 1.1	78.9	+ 0.2
Ocala	80.0	- 1.4	79.6	- 1.7	76.0	- 2.8
Orange City	80.5	- 1.7	80.6	- 1.2	77.7	- 1.9
Orlando	83.2	+ 1.1	84.0	+ 1.9	79.8	+ 0.3
Pinellas Park	81.4	.....	81.2	.....	79.0	.....
Plant City	83.3	+ 2.1	.....	.....	.....	.....
Rockwell	81.8	- 0.2	81.8	+ 0.1	78.5	- 1.7
St. Cloud	81.8	.....	81.2	.....	80.4	.....
St. Leo	80.2	- 1.2	80.4	- 1.0	78.3	- 1.3
St. Petersburg	82.6	.....	82.6	.....	80.7	.....
Sanford	81.4	.....	81.4	.....	79.2	.....
Tampa	81.6	+ 0.4	81.7	+ 0.3	79.6	- 0.1
Tarpon Springs	81.3	+ 0.3	81.6	+ 0.4	78.6	- 1.0
Titusville	81.2	+ 0.2	80.8	- 0.4	79.0	- 0.6
Southern Division.						
Arcadia .....	.....	.....	.....	.....	.....	.....
Avon Park	80.8	- 0.8	81.1	- 0.6	79.4	- 0.8
Boca Grande	83.6	.....	83.0	.....	81.2	.....
Bradentown	80.6	- 0.3	80.4	- 0.8	78.6	- 1.3
Davie	79.6	.....	79.0	.....	78.4	.....
Eddy	81.6	.....	81.8	.....	.....	.....
Fort Lauderdale	81.8	.....	81.9	.....	80.9	.....
Fort Myers	81.6	+ 0.7	81.8	+ 0.7	79.9	0.0
Griffin	79.2	.....	79.4	.....	79.2	.....

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Mean Temperature for the Year 1916, with
Departures from the Normal—Continued.

Stations.	July.		August.		September.	
	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.
Homestead	80.4	.....	80.8	.....	80.0	.....
Hypoluxo	82.2	+ 0.7	81.4	- 0.2	80.8	0.0
Key West	82.3	- 1.4	82.5	- 1.3	81.7	- 0.8
Long Key	85.0	.....	84.1	.....	82.2	.....
Miami (1)	80.8	- 1.1	80.6	- 1.4	79.6	- 1.9
Miami (2)	81.8	.....	82.0	.....	80.6	.....
Punta Gorda	82.4	.....	82.6	.....	80.0	.....
Ritta	81.4	.....	81.8	.....	80.0	.....
Sand Key	81.1	.....	82.2	.....	81.0	.....
Western Division.						
Apalachicola	81.1	- 0.8	81.8	+ 0.1	78.5	- 0.9
Bonifay .....	.....	.....	81.6	- 0.2	75.6	- 2.8
DeFuniak Springs	79.9	- 0.7	81.7	+ 0.9	77.6	- 0.1
Garniers (near) .....	.....	.....	.....	.....	.....	.....
Marianna	80.4	- 0.6	81.8	+ 0.6	76.2	- 1.3
Molino	77.8	- 1.9	80.5	0.0	74.8	- 2.6
Panama City .....	.....	.....	.....	.....	79.1	0.0
Pensacola	79.0	- 2.4	81.0	0.0	76.8	- 1.1
St. Andrews .....	.....	.....	.....	.....	.....	.....
Wausau	80.8	- 1.1	82.0	+ 0.3	76.2	- 1.8

Small figures indicate number of days missing from report.

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Mean Temperature for the Year 1916, with
Departures from the Normal—Continued.

Stations.	October.		November.		December.	
	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.
Northern Division.						
Archer	70.8 ¹	— 0.8	60.2 ¹	— 2.8	.....	.....
Bristol	69.6	.....	61.2	.....	54.6	.....
Carrabelle	70.4	— 0.4	61.0	— 0.7	55.0	+ 0.8
Cedar Keys	73.8	1.2	65.8	+ 2.1	59.4	+ 1.0
Crescent City	73.4	+ 1.2	64.8	+ 0.1	60.4	+ 3.2
Federal Point	72.8	+ 0.9	64.8	0.8	62.4	+ 5.0
Fenholloway	71.8	.....	61.2	.....	57.0	.....
Fernandina	70.0	— 1.4	62.6	+ 0.4	57.8	+ 1.8
Gainesville	71.7	+ 0.3	63.8	0.8	59.0	+ 2.6
Hilliard	70.2	.....	61.1	.....	56.2	.....
Jacksonville	69.6	— 0.1	63.1	+ 1.8	58.0	2.8
Jasper .....	.....	.....	.....	.....	.....	.....
Johnstown	70.6 ¹	— 0.2	60.8 ¹	— 0.7	57.0 ¹	+ 2.3
Lake City	70.3	+ 0.5	61.2	— 0.4	56.0	0.0
Live Oak .....	.....	.....	.....	.....	.....	.....
Maccleenny	70.0 ²	— 0.7	61.6 ¹	— 0.3	57.3	+ 3.0
Madison	70.2	0.1	60.6	— 0.2	54.7	+ 0.4
Middleburg	71.0 ²	+ 0.7	61.6 ¹	+ 0.7	56.6 ²	+ 2.4
Monticello .....	.....	.....	.....	.....	.....	.....
Morton's Farm	69.3 ¹¹	.....	61.6	.....	57.1	.....
Mount Pleasant	69.0	.....	60.0	.....	55.0	.....
Newport .....	.....	.....	.....	.....	.....	.....
Quincy	70.2 ²	.....	59.3	.....	.....	.....
St. Augustine	72.1	— 0.3	65.8	+ 1.6	60.0	2.4
Satsuma Heights	71.8 ²	.....	63.4 ²	.....	58.8 ¹	.....
Switzerland	71.7	1.2	63.2 ¹	+ 0.8	58.0 ²	+ 2.2
Tallahassee	70.2	+ 1.8	61.2	+ 1.7	55.8	+ 2.9
Central Division.						
Bartow	74.0	0.0	65.4	— 1.1	62.0	+ 0.6
Bassenger (near)	76.5	.....	67.4	.....	64.2	.....
Brooksville (1)	74.4 ¹	1.1	.....	.....	61.6 ¹	+ 2.0
Brooksville (2)	73.2	.....	64.0	.....	60.2	.....
Clermont .....	.....	.....	67.4	— 0.1	63.6	+ 2.5
Coleman .....	.....	.....	64.9 ¹	.....	60.6 ²	.....

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Mean Temperature for the Year 1916, with
Departures from the Normal—Continued.

Stations.	October.		November.		December.	
	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.
DeLand	72.8	+ 0.8	62.4	— 2.0	58.6	— 0.2
Eustis	73.8	+ 0.5	64.8	— 0.8	61.2	+ 1.3
Fellsmere	76.1	.....	68.8	.....	66.1	.....
Fort Meade	76.2	2.1	66.2 ^s	— 0.7	.....	.....
Fort Pierce	77.2	+ 0.9	71.3	+ 1.9	67.0	+ 2.6
Inverness	73.2	+ 0.6	65.2 ^s	2.1	59.8	+ 3.0
Kissimmee	75.5	+ 0.6	66.9	— 0.5	63.2	+ 2.0
Lakeland	75.2	.....	67.2	.....	64.6	.....
Lucerne Park	75.4	.....	67.1	.....	63.6	.....
Malabar	77.2	+ 1.7	69.7	1.0	65.7	+ 2.6
McDonald	72.2	— 0.7	63.2	— 2.4	69.4	+ 0.2
Merritts Island	75.7	+ 0.2	68.4	0.0	63.9	+ 0.9
New Smyrna	74.3	1.2	66.8	+ 1.6	61.4 ^s	+ 2.8
Ocala	71.0	— 1.0	61.8	— 2.0	57.8	+ 0.2
Orange City	74.2	+ 0.9	63.8	— 0.9	69.2	— 0.1
Orlando	76.2	+ 1.5	67.0	+ 0.5	63.2	2.6
Pinellas Park	74.4	.....	66.8	.....	64.0	.....
Plant City .....	.....	.....	67.4 ^s	+ 1.1	62.6 ^s	+ 2.0
Rockwell	72.4 ^s	— 0.9	.....	.....	.....	.....
St. Cloud	74.0	.....	65.0	.....	62.0	.....
St. Leo	73.8	0.4	65.0	— 1.1	61.8	+ 1.9
St. Petersburg	76.2	.....	68.1	.....	64.2	.....
Sanford	74.4	.....	66.2	.....	61.4	.....
Tampa	75.0	+ 1.2	66.8	0.0	63.0	+ 1.8
Tarpon Springs	74.6	+ 1.3	66.3	+ 0.6	61.7	1.8
Titusville	75.2	+ 1.5	67.3	+ 0.9	62.6	1.0
Southern Division.						
Arcadia .....	.....	.....	68.0	+ 0.3	64.0	+ 0.9
Avon Park	75.1	0.2	66.9	— 1.0	64.8	+ 2.0
Boca Grande	77.8	.....	69.7	.....	.....	.....
Bradentown	75.6	+ 1.5	66.9	— 0.2	62.2	+ 0.6
Davie	75.6	.....	70.0	.....	66.3	.....
Eddy .....	.....	.....	.....	.....	.....	.....
Fort Lauderdale	77.8	.....	73.2	.....	69.0	.....
Fort Myers	76.4	+ 1.1	69.1	— 0.5	66.2	+ 1.9
Griffin	76.0	.....	71.4 ^s	.....	.....	.....

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Mean Temperature for the Year 1916, with
Departures from the Normal—Continued.

Stations.	October.		November.		December.	
	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.
Homestead	77.0	.....	72.6	.....	67.4	.....
Hypoluxo	78.6	+ 1.1	72.8	+ 0.4	68.8	0.5
Key West	79.3	+ 0.6	74.2	— 0.1	71.6	+ 1.5
Long Key	79.4	.....	.....	.....	72.4	.....
Miami (1)	77.1	— 0.6	71.9	— 0.1	69.0	1.0
Miami (2)	78.3	.....	73.3	.....	70.2	.....
Punta Gorda	76.9	.....	69.8	.....	64.8	.....
Rital	77.6	.....	70.6	.....	67.6	.....
Sand Key	78.8	.....	73.8	.....	72.0	.....
Western Division.						
Apalachicola	71.7	0.6	63.0	+ 0.9	57.1	+ 1.8
Bonifay	69.0	+ 0.8	58.4	— 1.0	53.7	1.7
DeFuniak Springs	69.9	+ 1.4	59.7	+ 0.7	.....	.....
Garniers (near)	67.8	.....	61.4	.....	55.5	.....
Marianna	68.8	+ 0.8	57.0	— 1.4	53.6	0.4
Mollno	66.8	— 0.4	57.0	— 2.1	52.3	+ 0.1
Panama City	69.4	— 0.6	.....	.....	.....	.....
Pensacola	69.6	+ 0.2	60.4	+ 0.8	55.2	1.3
St. Andrews .....	.....	.....	63.0	+ 3.2	57.6	+ 4.4
Wausau .....	.....	.....	.....	.....	.....	.....

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Temperature for the Year 1916, with Departures from the Normal—Continued.

Stations.	Annual.	
	Temperature	Departure.
Northern Division.		
Archer		
Bristol		
Carrabelle	68.1	— 0.2
Cedar Keys	71.2	+ 0.9
Crescent City	70.7	+ 0.4
Federal Point	71.1	+ 1.5
Fenholloway	68.6	
Fernandina		
Gainesville	70.0	0.2
Hilliard	69.0	
Jacksonville	69.2	+ 1.0
Jasper		
Johnstown		
Lake City	63.7	— 0.3
Live Oak		
Maccleenny		
Madison	68.6	— 0.1
Middleburg	63.9	+ 1.6
Monticello		
Morton's Farm		
Mount Pleasant	68.0	
Newport		
Quincy		
St. Augustine	70.0	+ 0.5
Satsuma Heights	69.5	
Switzerland		
Tallahassee	63.6	1.4
Central Division.		
	71.3	— 0.7
Bartow		
Bassenger (near)	71.3	— 0.7
Brooksville (1)		
Brooksville (2)	69.9	
Clermont		

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Temperature for the Year 1916, with Departures from the Normal—Continued.

Stations.	Annual.	
	Temperature.	Departure.
Coleman	70.4	+ 0.4
DeLand	71.8	+ 0.2
Eustis	72.5	.....
Fellsmere	74.0	+ 1.1
Fort Meade	70.9	1.0
Fort Pierce	72.9	+ 0.6
Inverness	72.6	.....
Kissimmee	73.2	.....
Lakeland	73.5	+ 0.9
Lucerne Park	69.6	- 1.5
Malabar	72.4	- 0.1
McDonald .....	.....	.....
Merritts Island	69.1	- 1.1
New Smyrna	70.2	- 0.9
Ocala	72.9	+ 1.2
Orange City	71.6	.....
Orlando .....	.....	.....
Pinellas Park	71.9	.....
Plant City	71.1	- 0.4
Rockwell	73.2	.....
St. Cloud	71.6	.....
St. Leo	72.0	+ 0.4
St. Petersburg	71.4	0.4
Sanford	71.5	+ 0.3
Tampa .....	.....	.....
Tarpon Springs .....	.....	.....
Titusville .....	.....	.....
Southern Division.		
Arcadia	72.9	+ 0.3
Avon Park .....	.....	.....
Boca Grande	71.2	- 0.5
Bradentown .....	.....	.....
Davie .....	.....	.....
Eddy	74.8	.....
Fort Lauderdale .....	.....	.....

CLIMATOLOGICAL DATA—Continued.

Monthly and Annual Temperature for the Year 1916, with Departures from the Normal—Continued.

Stations	Annual.	
	Temperature.	Departure
Fort Myers	73.4	+ 0.3
Griffin		
Homestead		
Hypoluxo	74.8	0.0
Key West	76.7	— 0.2
Long Key	76.7	— 0.2
Miami (1)	74.1	— 1.3
Miami (2)		
Punta Gorda		
Ritta	73.7	
Sand Key	76.0	
Western Division.		
Apalachicola	69.4	0.4
Bon'fay		
DeFuniak Springs		
Garniers (near)		
Marianna	67.2	+ 0.1
Molino	66.6	— 0.1
Panama City		
Pensacola	67.8	— 0.1
St. Andrews		
Wausau		

Small figures indicate number of days missing from report.

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